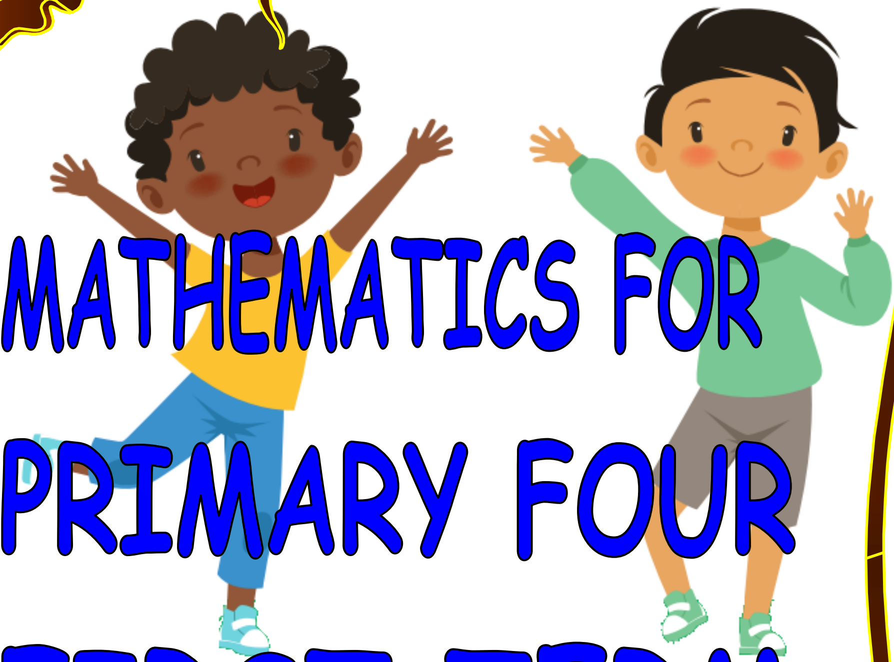
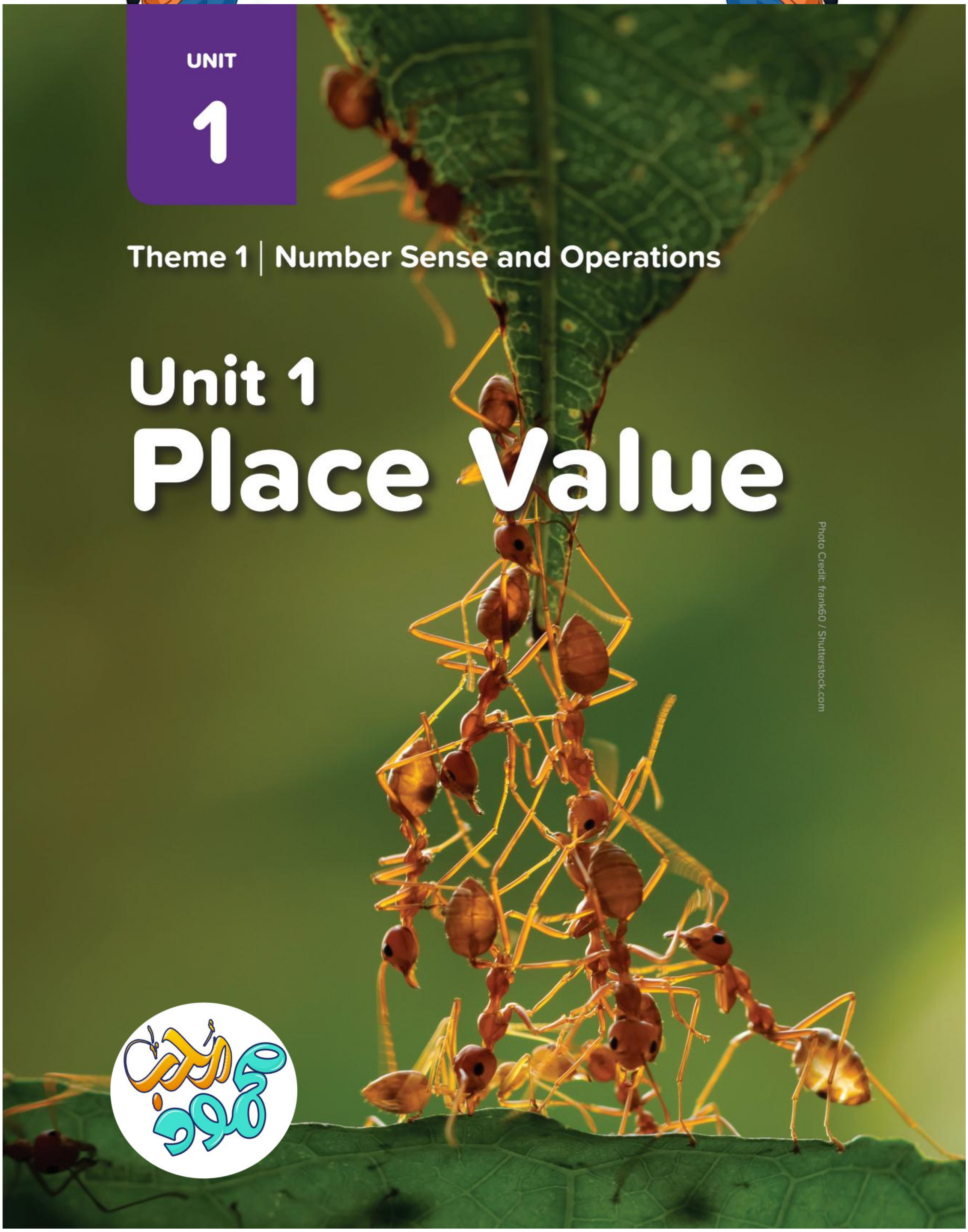


MATHEMATICS FOR PRIMARY FOUR FIRST TERM









UNIT 1

Theme 1 | Number Sense and Operations

Unit 1
Place Value

Concept (1): Reinforcing Place Value

Lesson (1) Really Big Numbers

	PERIOD			PERIOD			PERIOD		
MILLIARDS	MILLIONS			THOUSANDS			ONES		
O	H	T	O	H	T	O	H	T	O
6	2	0	8	1	9	6	3	1	8
6 milliard	208 million			196 thousand			318		

Match the cards that have the same numeral.

a.	43,509,458	1.	4 milliard, 103 million, 905 thousand, 484
b.	403,590,548	2.	four million, nine hundred fifty thousand, eight hundred fifty-four
c.	4,103,905,484	3.	forty-three million, five hundred nine thousand, four hundred fifty-eight
d.	4,950,854	4.	403 million, 590 thousand, 548

Read the following numbers:

5,200,005	30,645,214	720,003,200
600,247,004	42,320,218	9,040,000
4,600,001	5,234,100	60,001,240
9,321,400,050	1,004,021,016	4,000,200,000
7,000,000,009	3,010,040,500	8,001,023,008
2,501,200,020	6,030,010,012	5,200,000,402

Lesson (2) Changing Values

× 10 × 10 × 10 × 10 × 10 × 10

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
2	2	2	2	2	2	2

2 × 1,000,000	2 × 100,000	2 × 10,000	2 × 1,000	2 × 100	2 × 10	2 × 1
2,000,000	200,000	20,000	2,000	200	20	2

Find the value of the underlined digit.

2. 703,890 ______
3. 63,540 ______
4. 182,034 ______
5. 345,890 ______

Find the value of the underlined digit.

8. 230,001 ______
9. 803,040 ______
10. 46,842 ______
11. 980,650 ______

Complete:

a. 56, 000 = ______ thousands.

b. 280, 000 = ______ hundreds.

c. 25, 600 tens = ______ thousands.

d. 300 thousands = ______ hundreds.

e. 55 thousands = ______ hundreds.

f. 850 thousands = ______ hundreds.

g. 72, 000 tens = ______ thousands.

h. 87,900,000 hundreds = ______ millions.

Homework

Complete the following table:

Numbers	Milliards	Millions			Thousands			Ones		
	O	H	T	O	H	T	O	H	T	O
5 406 548 987										
3 589 021 479										
	5	4	6	3	9	8	7	1	5	9
	1	6	4	7	8	5	2	0	8	2

Complete:

(1) 5,326,548,987 = ... billion, ... million, ... thousand & ....

(2) 2,163,900,800 = ... billion, ... million, ... thousand & ....

(3) 4,132,876,514 = ... billion, ... million, ... thousand & ....

(4) 7,325,165,273 = ... billion, ... million, ... thousand & ....

(5) 5,153,276,542 = ... billion, ... million, ... thousand & ....

(6) 5,180,070,506 = ... billion, ... million, ... thousand & ....

(7) 6,537,002,054 = ... billion, ... million, ... thousand & ....





Write the value and the place value of the red digit:

The number	The value	The place value
4,325,526,412	…………………………	…………………………………………
8,523,256,412	…………………………	…………………………………………
2,732,154,546	…………………………	…………………………………………
5,124,652,487	…………………………	…………………………………………
1,541,656,218	…………………………	…………………………………………
9,148,562,487	…………………………	…………………………………………
4,562,732,154	…………………………	…………………………………………

Lesson (3) Many Ways to Write

1. Write each number in standard form.

a. 5,000,000,000 + 70,000 + 1,000 + 40 + 9 ____________

b. Fifty-eight million, thirty-seven thousand, forteen. ____________

2. Write the word form of the number 3,300,030,303

____

____

3. Write the expanded form of the number 7,608,490

____

Complete the following.

a. 700,005,009 = seven hundred ______, five ______, nine.

b. 4,030,400,050 = ______ milliard, ______ million, ______ thousand, ______

c. 417,900,770 = ______ seventeen million, nine hundred ______, ______ seventy.

d. 2,100,080,005 = ______ milliard, one ______, eighty ______, five.

Choose the correct answer.

1. What is the standard form for 3,000,000 + 500,000 + 50 ?
   A. 355 B. 3,500,500
   C. 3,500,050 D. 3,005,005

2. Which of the following shows the numeral "five milliard, four hundred twenty-six thousand" in standard form ?
   A. 5,000,426 B. 5,426,000
   C. 5,000,426,000 D. 5,426,000,000

3. Which of the following represents the number 4,305,082 written in expanded form ?
   A. 4,000,000 + 300,000 + 50,000 + 800 + 2
   B. 4,000,000 + 300,000 + 50,000 + 80 + 2
   C. 4,000,000 + 30,000 + 5,000 + 800 + 2
   D. 4,000,000 + 300,000 + 5,000 + 80 + 2

Complete the table:

	Standard Form	Expanded Form
1	565	
2		4000 + 700 + 6
3	2,345,222,197	
4		6,000,000 + 200,000 + 30,000 + 7,000 + 900 + 50 + 8
5	2,305,031	



Lesson (4) Composing and Decomposing

Composed 345,532

Decomposed (3 x 100,000) + (4 x 10,000) + (5 x 1,000) + (5 x 100) + (3 x 10) + (2 x 1)

Milliards	Millions			Thousands			Ones		
O	H	T	O	H	T	O	H	T	O
				3	4	5	5	3	2

1. **Composed** 6,124,030,420

Decomposed ______

Milliards	Millions			Thousands			Ones		
O	H	T	O	H	T	O	H	T	O

2. **Composed** ______

Decomposed ______

Milliards	Millions			Thousands			Ones		
O	H	T	O	H	T	O	H	T	O
5	4	0	0	1	5	9	0	2	4

3. **Composed** ____________________

Decomposed (7 x 1,000,000,000) + (5 x 10,000,000) + (4 x 10,000) + (3 x 1,000) + (5 x 100) + (9 x 1)

Milliards	Millions			Thousands			Ones		
O	H	T	O	H	T	O	H	T	O

Composed : ____________

Decomposed : (7 × 10,000) + (8 × 1,000) + (5 × 100) + (2 × 10) + (6 × 1)

MILLIARDS	MILLIONS			THOUSANDS			ONES		
O	H	T	O	H	T	O	H	T	O

Composed : ____________

Decomposed : ____________

MILLIARDS	MILLIONS			THOUSANDS			ONES		
O	H	T	O	H	T	O	H	T	O
3	2	0	9	5	0	0	7	0	8

Composed : 7,052,318,709

Decomposed : ____________

MILLIARDS	MILLIONS			THOUSANDS			ONES		
O	H	T	O	H	T	O	H	T	O

Form the greatest and the smallest number:

4 0 1 8 3 7 6 5 2 9

The greatest number: ....

The Smallest number: ....

4 5 1 9 3 7 6 5 2

The greatest number: ....

The Smallest number: ....



0 1 8 3 7 6 5 2 4

The greatest number: ....

The Smallest number: ....

4 1 0 3 7 6 5 2

The greatest number: ....

The Smallest number: ....

1 8 5 1 6 0 2 9

The greatest number: ....

The Smallest number: ....

Homework

Compare the numbers below and circle the greater number in each row:

23,410	22,999
111,223	101,345
4,890	4,891

Use the digits 3, 5, 7, 8, 8, 1, 6, 2 to make the greatest number you can. Then use the same digits to make the smallest number you can.

What is the value of the following?

A. 9 in the Tens place? ______________________

B. 3 in the Hundreds place? ______________________

C. 60 Tens? ______________________

D. 80 Thousands? ______________________

Choose the correct answer:

1. What is the standard form for 3,000,000 + 500,000 + 50 ?
   - A. 355
   - B. 3,500,500
   - C. 3,500,050
   - D. 3,005,005

2. Which of the following shows the numeral "five milliard, four hundred twenty-six thousand" in standard form ?
   - A. 5,000,426
   - B. 5,426,000
   - C. 5,000,426,000
   - D. 5,426,000,000

3. Which of the following represents the number 4,305,082 written in expanded form ?
   - A. 4,000,000 + 300,000 + 50,000 + 800 + 2
   - B. 4,000,000 + 300,000 + 50,000 + 80 + 2
   - C. 4,000,000 + 30,000 + 5,000 + 800 + 2
   - D. 4,000,000 + 300,000 + 5,000 + 80 + 2

4. Which is the correct way to write the numeral 25,702 in word form ?
   - A. twenty-five, seven hundred two.
   - B. twenty-five thousand, seven hundred two.
   - C. twenty-five ten thousand, seven hundred two.
   - D. twenty-five thousand, seventy-two.

5. Which expression decomposes the numeral 50,374 in expanded form ?
   - A. 50,000 + 300 + 70 + 4
   - B. 50,000 + 3,000 + 70 + 4
   - C. 50,000 + 3,000 + 700 + 4
   - D. 5,000 + 300 + 70 + 4

6. Which is a compose to (7 × 10,000) + (2 × 10) + (4 × 1) ?
   - A. 724
   - B. 70,240
   - C. 7,024
   - D. 70,024

7. Which numeral and phrase are ways of writing the number that is composed of 3 ten thousands, 5 hundreds, and 2 ones ? Select two correct answers.
   - A. 310,521
   - B. 30,520
   - C. 30,502
   - D. three hundred ten thousand, five hundred twenty one.
   - E. thirty thousand, five hundred two.
   - F. thirty thousand, five hundred twenty.

Decompose the following numerals:

Word form:

Nine million, four hundred forty thousand, two hundred twenty.

Decomposed form:

……………………………………………………………………………………

……………………………………………………………………………………

Word form:

Six milliard, nine hundred million, ten thousand, two hundred.

Decomposed form:

……………………………………………………………………………………

……………………………………………………………………………………

Word form:

Eight million, seventy thousand, two hundred.

Decomposed form:

……………………………………………………………………………………

……………………………………………………………………………………

Word form:

Twenty seven hundred.

Decomposed form:

……………………………………………………………………………………

……………………………………………………………………………………

Concept (2): Using the Place Value

Lesson (5) Comparing Numbers in Multiple forms

Complete:

(1) The smallest 7-digit number is ………………………………………

(2) The smallest 9-digit number is ………………………………………

(3) The smallest different 8-digit number is ……………………………………

(4) The smallest different 10-digit number is ……………………………………

(5) The greatest 6-digit number is ………………………………………

(6) The greatest 12-digit number is ……………………………………

(7) The greatest different 7-digit number is …………………………………

(8) The greatest different 8-digit number is …………………………………

Complete using (<) , (>) or (=):

14,780,064		14,790,064
5,103,492,500		Five milliard, three hundred million, seven hundred fifteen thousand, forty-three
(7×100,000,000) + (4×10,000,000) + (9×10,000) + (8×10) + (1×10)		70,000 + 9,000 + 600 + 40 + 3
8,040,761,903		8,000,000,000 + 400,000,000 + 700,000 + 60,000 + 1,000 + 900 + 3

Lesson (6) Descending and Ascending Numbers

1. List Omar's data in ascending order:

78,090 79,010 78,091 79,100 78,999

________; ________; ________; ________; ________

2. List Mariam's data in descending order. You may use word or standard form.

- three milliard, ten million, one thousand, thirty-four
- three milliard, one million, three hundred twenty-three thousand, three hundred ninety-one
- three milliard, nine hundred ninety thousand, nine hundred ninety-two
- three milliard, one hundred ten million, ninety-nine thousand, four hundred ninety-three

____

____

____

____

3. List the numbers in ascending order. Use the form in which they are given.
   - four milliard, six hundred thousand, four
   - 461,014
   - four milliard six hundred thousand forty
   - (4 x 1,000,000,000) + (4 x 100,000) + (6 x 10)
   - 6,400,042

____

____

____

____

Write the numbers in an ascending order:

a. 7,122,890 , 700,122,089 , 70,122,098 , 7,120,980

The order is : ________ , ________ , ________ , ________

b. 3,452,805 , 3,542,805 , 542,905 , 1,000,000,000

The order is : ________ , ________ , ________ , ________

c. 430,000,459 , 43,000,549 , 403,000,456 , 430,549,000

The order is : ________ , ________ , ________ , ________

d. 2,000,751,240 , 2,100,101,240 , 2,010,010,860 , 299,782,561

The order is : ________ , ________ , ________ , ________

Lesson (7) Rounding Rules

Rounding means replacing the exact number by another simpler number, near to the exact number.

[1] Round each of the following to the nearest 1000:

126,237	≅	36,873	≅ ....
33,500	≅	19,254	≅ ....
821,799	≅	49,500	≅ ....
2,231,274	≅	233,695	≅ ....

[2] Round each of the following to the nearest 10,000:

15,000	≅	52,600	≅ ....
78,000	≅	92,000	≅ ....
456,450	≅	69,224	≅ ....
45,274	≅	88,695	≅ ....

[3] Round each of the following to the nearest 100,000:

250,000	≅	275,600	≅ ....
878,000	≅	990,000	≅ ....
456,450	≅	469,224	≅ ....
645,274	≅	988,695	≅ ....

[4] Round each of the following to the nearest 1,000,000:

3,250,000 ≅ ……………………………

7,878,000 ≅ ……………………………

10,456,450 ≅ ……………………………

65,645,274 ≅ ……………………………

23,275,600 ≅ ……………………………

4,990,000 ≅ ……………………………

45,469,224 ≅ ……………………………

123,988,695 ≅ ……………………………

[5] Round each of the following to the nearest 1,000,000,000:

2,323,250,000 ≅ ……………………………

8,247,878,000 ≅ ……………………………

4,010,456,450 ≅ ……………………………

5,665,645,274 ≅ ……………………………

6,223,275,600 ≅ ……………………………

7,504,990,000 ≅ ……………………………

6,045,469,224 ≅ ……………………………

2,123,988,695 ≅ ……………………………

[8] Choose the correct answer:

a) 17085 ≅ 17000 to the nearest…… (10 , 100 , 1000)

b) 8453 ≅ 8500 to the nearest…… (10 , 100 , 1000)

c) 75643.1 ≅ 75600 to the nearest…… (10 , 100 , 1000)

d) 3725.6 ≅ 3730 to the nearest…… (10 , 100 , 1000)

Try This! Round to the place value of the underlined digit.

A. <u>6</u>4,999 ____________

B. <u>8</u>50,000 ____________

C. 30<u>1</u>,587 ____________

D. 1<u>0</u>,832 ____________

Round to the place value of the underlined digit.

2. 93<u>4</u>,567 ____________

3. 6<u>4</u>1,267 ____________

4. <u>2</u>34,890 ____________

5. 3<u>4</u>7,456 ____________

6. <u>5</u>62,408 ____________

7. 2<u>8</u>4,792 ____________

8. 19<u>9</u>,814 ____________

9. 923,7<u>1</u>8 ____________

PRACTICE

Follow the directions in each problem to round each number to the given place. Use the midpoint strategy or the Rounding Rule strategy.

1. A plane's altitude increased by 2,721 meters. Round this number to the nearest Thousand.

2. A runner ran 1,537 meters but describes the distance he ran with a rounded number. Round 1,537 to the nearest Hundred.

3. A record number of 23,386 ants live in colony A. Round this number to the nearest Ten Thousand.

Homework

Round the numbers below to the Thousands place.

1. 9,621 ≈
2. 42,502 ≈
3. 3824,157 ≈

Round the numbers below to the Hundreds place.

4. 410,671 ≈
5. 423,502 ≈
6. 1,632,542 ≈

Use front-end estimation for the following numbers:

2. 86,433,920

3. 6,627,513,202

4. One hundred sixty-three million, four hundred thirty thousand, eight hundred two

Unit (1) Assessment

[1] Choose the correct answer:

(1) The value of the digit 6 in the number 61,974 is ....

ⓐ 6 ⓑ 600 ⓒ 6,000 ⓓ 60,000

(2) 476,651 = ... (using front-end estimation)

ⓐ 40,000 ⓑ 400,000 ⓒ 500,000 ⓓ 476,000

(3) (6×1,000,000) + (5×100,000) + (3×1,000) + (2×100) = ...

ⓐ 6,503,200 ⓑ 6,305,200 ⓒ 3,605,200 ⓓ 2,305,600

(4) 6,749,001,551 ≃ .... (to the nearest milliard)

ⓐ 6,000,000,000 ⓑ 7,000,000,000 ⓒ 7,600,000,000 ⓓ 6,700,000,000

(5) The place value of the digit 7 in the number 17,315,120 is ....

ⓐ thousands ⓑ hundred thousands ⓒ ten millions ⓓ millions

(6) 1 milliard, 235 million, 127 = ... (in the standard form)

ⓐ 1,235,000,127 ⓑ 1,272,351 ⓒ 1,235,127,000 ⓓ 1,235,127

(7) Four hundred sixty-five thousand, nine hundred eighteen 4,000,000

ⓐ < ⓑ > ⓒ = ⓓ otherwise

[2] Complete:

(1) 200 tens = ... hundreds.

(2) Decompose: 6,030,200 = ...

(3) The smallest number can be formed from the digits: 1, 5, 3, 0, 6 is ....

(4) 46,651 ≃ .... (to the nearest thousand)

[3] Find:

(1) Arrange the following numbers from least to greatest:
82,937 – 218,476 – 273,105 – 27,382

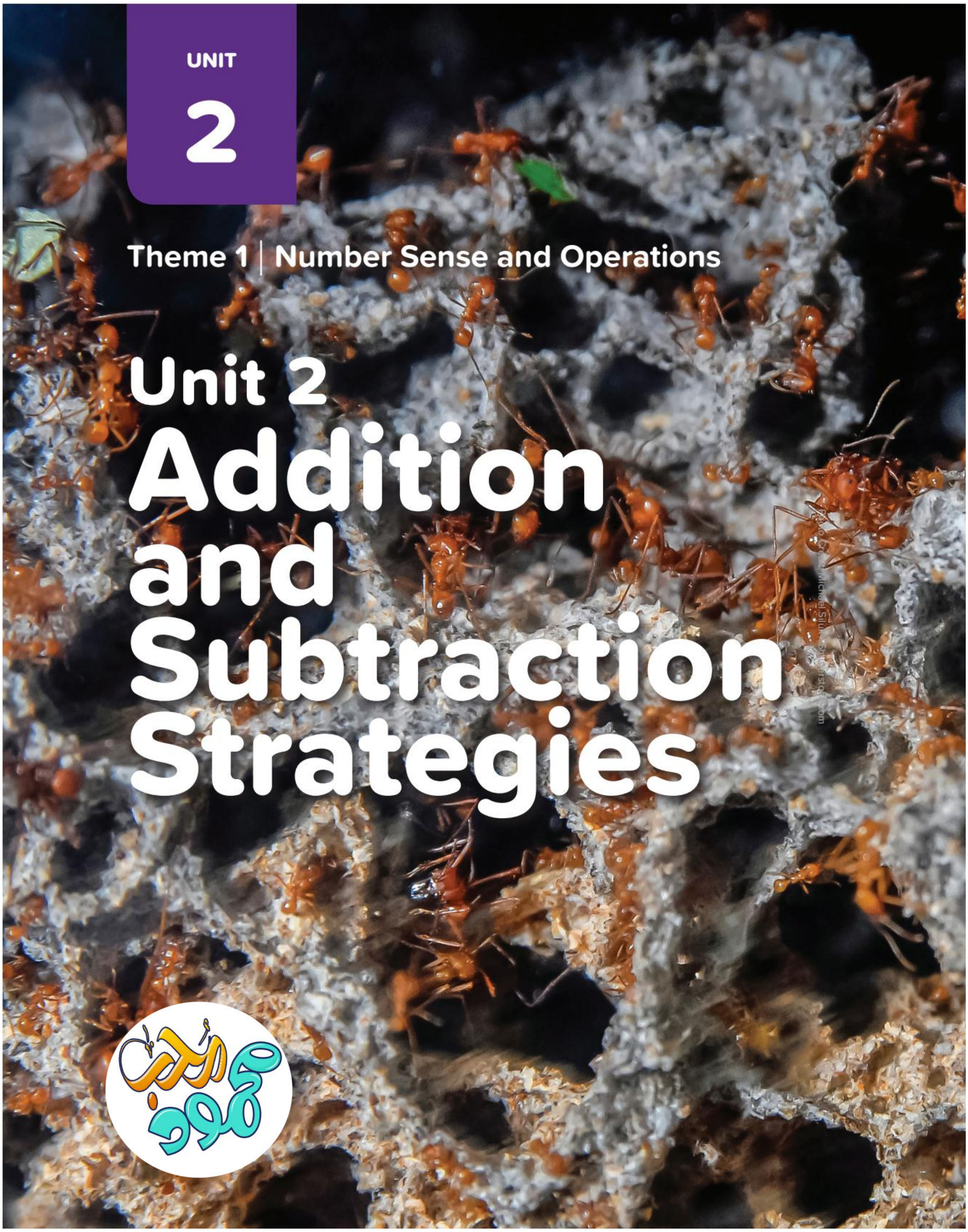
....

(2) Expand: 417,125,000

....






UNIT
2
Theme 1 | Number Sense and Operations
Unit 2
Addition and Subtraction Strategies

Concept (1)
Using Addition & Subtraction Strategies

Lesson (1) Properties of Addition

Additive Identity Property Solve the following problems.

2,345 + 0	0 + 12,567,109
__________	__________

Commutative Property Solve the following problems.

5 + 7 + 8 + 3	8 + 7 + 3 + 5	7 + 5 + 8 + 3	3 + 7 + 8 + 5
__________	__________	__________	__________

Associative Property Solve the following problems. Remember to solve what is in the parentheses first.

(10 + 4) + 20 + 17	10 + (4 + 20) + 17	10 + 4 + (20 + 17)
__________	__________	__________

1. Select the *best* answer to correctly complete the statement.

Additive Identity	Associative	Commutative

4 + 6 = 6 + 4 is true because of the ______________________________ Property of Addition.

2. Which of these statements is true regarding the sum of 16 + 0?

   A. 16 + 0 = 16 because any number added to 0 will equal that number.

   B. 16 + 0 = 0 because any number added to 0 will equal zero.

   C. 16 + 0 = 1 + 6 because the addends can be grouped in any way.

   D. 16 + 0 = 6 + 1 because the addends can be combined in any order.

3. Jabari writes 12 − (8 + 1) = (12 − 8) + 1. Is the statement true?

   A. Yes, because the Associative Property applies to subtraction.

   B. Yes, because the Commutative Property applies to subtraction.

   C. No, because the Associative Property does not apply to subtraction.

   D. No, because the Commutative Property does not apply to subtraction.

Find the sum. $\begin{array}{r} 546 \\ +\ 215 \\ \hline \end{array}$

A. 331

B. 751

C. 756

D. 761

Find the difference. $\begin{array}{r} 423 \\ -\ 118 \\ \hline \end{array}$

A. 305

B. 306

C. 315

D. 341

Homework

Select the *best* answer to complete each statement.

Additive Identity	Associative	Commutative

Jamal wrote (14 + 6) + 21 = 14 + (6 + 21) using the

____________________ Property of Addition.

He wrote 33 + 16 = 16 + 33 using the ____________________

Property of Addition. He wrote 28 + 0 = 28 using the

____________________ Property of Addition.

A student writes the statement 87 − 52 = 52 − 87. Why is this statement incorrect?

A. The Associative Property applies to addition but not subtraction.

B. The Commutative Property applies to addition but not subtraction.

C. The Associative Property applies to subtraction but not addition.

D. The Commutative Property applies to subtraction but not addition.

Obaid found that 29,828 + 41,309 = 71,137. Which estimate could he use to check if his answer is reasonable?

A. 30,000 + 50,000 = 80,000

B. 20,000 + 50,000 = 70,000

C. 30,000 + 40,000 = 70,000

D. 20,000 + 40,000 = 60,000





Lesson (2) Adding with Regrouping

Find the result:

a) 3 7 8 5 4 2 1 + 2 1 0 2 3 4	b) 4 8 9 1 2 4 3 + 3 1 0 2 3 1 5	c) 6 5 8 8 7 6 + 6 7 3 4 5 3 8
d) 6 5 4 3 0 0 0 + 4 2 4 2 7 8 8	e) 7 0 0 8 1 9 8 + 8 1 9 4 8 5	f) 8 0 0 0 0 0 0 + 3 5 1 4 6 7 9

Estimate and Solve Work with your partner to estimate the sums and then solve the problems.

1. 579 → ______
   + 62 → + ______

2. 8,049 → ______
   + 6,199 → + ______

A colony of ants is on a march through the jungle looking for food. On this march they made 2 bridges. The first bridge is composed of 142 ants. The second bridge is composed of 165 ants. How many ants were needed for both bridges? Show your work. Then, explain how you know your answer is reasonable.


Ants Forming a Bridge

Estimate	Exact

	Species	Total	Round Each Number to the Nearest Thousand
1.	Black Garden Ants	58,712	
2.	Pavement Ants	81,475	
3.	Pharaoh Ants	42,358	

4. How many ants would you have if you combined the Pharaoh Ants and the Pavement Ants? Use your rounded numbers from the table to estimate, and then find the exact answer.

5. What is the total amount of ants? Use your rounded numbers from the table to estimate, and then find the exact answer.

Abeer and Ehab are traveling from Aswan to Alexandria. They will travel 514 km on the first day to Asyut. They will travel 597 km from Asyut to Alexandria on the second day. How many kilometers will they travel in all?

A Saharan Silver ant is the fastest ant on the planet. It can move about 855 mm a second. If this ant could maintain this speed for 2 seconds, how far would it go?

Lesson (3) Subtraction with Regrouping

A trap jaw ant wanted to cross a river that was 3,548 cm across. The ant had already swum 1,672 cm. How much farther does the ant have to go?

A fire ant colony 255,000 ants. A *Gigantiops destructor* ant colony has 6,200. What is the difference between the size of the two colonies?

Two colonies of fire ants were stuck in a flood and made floating rafts to survive. The first colony had approximately 1,267 ants and the second had 3,452 ants. How many more ants were in the second colony?



Homework

Using 10s Follow your teacher's directions to mentally solve the problems.

1. 3 + 7
2. 3 + 5 + 7
3. 7 + 6 + 3

4. 9 + 1
5. 1 + 7 + 9
6. 9 + 6 + 1

7. 7 + 7 + 3 + 3
8. 9 + 9 + 1 + 1

It takes 15,422,140 ants to move a log that weighs 77 kg. It takes approximately 6,350,300 ants to move a rock that weighs 32 kg. How many more ants does it take to move the log than the rock?

Use the subtraction algorithm to solve the problems. Then, round each number to the nearest Thousand to check the reasonableness of your answers.

1. $\begin{array}{r} 6,625 \\ -\ 4,417 \\ \hline \end{array}$

2. $\begin{array}{r} 23,640 \\ -14,635 \\ \hline \end{array}$

3. $\begin{array}{r} 25,884 \\ -\ 18,875 \\ \hline \end{array}$

4. $\begin{array}{r} 1,816 \\ -\ 1,066 \\ \hline \end{array}$

Concept (2): Solving Multistep Problems

Lesson (4) Bar Models, Variables, and Story Problems

There are 5,328 ants in the colony. In the colony, 2,164 ants are females and the rest are males. How many male ants are in the colony?

Bar Model:

Equation	Solution

There are 20,000 ants in the colony. In the colony, 12,000 are females and the rest are males. How many male ants are in the colony?

Bar Model:

Equation	Solution

In colony A there are 1,200 ants. Some ants are out foraging for food and supplies, and 700 ants are taking out the colony's trash. How many ants are foraging for food and supplies?

Bar Model:

Equation **Solution**

There are 12,000 species of ants. Of these 12,000 species, 2,500 species live in Africa and the rest live in other parts of the world. How many species do not live in Africa?

Bar Model:

Equation **Solution**

$14,000 - n = 6,000$

Bar Model:

Solution

$b - 53,500 = 75,200$

Bar Model:

Solution

$725,625 + c = 935,075$

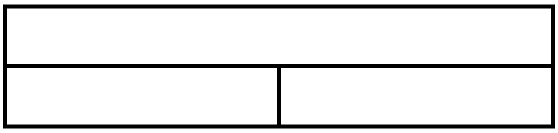
Bar Model:

Solution



13,280 – d = 5,420

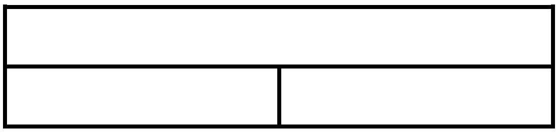
Bar Model:



Solution:

e + 205,925 = 810,775

Bar Model:



Solution:

Omar found a website created to study ant colonies. He saw that there were 1,025 ants in Colony A on Wednesday. On Friday, 101 ants leave the colony. How many ants are left in Colony A?



Mariam found the same website and saw that there were 1,555 ants in Colony B. How many more ants are in Colony B than in Colony A?

Lesson (5) Solving Multistep Story Problems with Addition and Subtraction

The Great Pyramid had 59,000 visitors in January, 27,525 visitors in February, and 32,975 visitors in March. They expect to have 150,000 visitors by the end of April. How many visitors need to show up in April to reach this count?

New Valley has a population of 256,088. If Matrouh has a population of 429,999 and South Sinai has a population of 108,951, how many more people do Matrouh and South Sinai have combined than New Valley?

The Nile River is approximately 6,650 kilometers long. Kareem and his family travel the Nile River from one end to the other end. If they travel 1,075 kilometers in January, then 1,120 kilometers in February, and then 1,325 kilometers in March, how many more kilometers do they still need to travel to reach the other end?

Aswan has a population of 1,575,914. If Luxor has a population of 1,333,309 and Red Sea has a population of 383,796, how many more people do Luxor and Red Sea have combined than Aswan?

Hazem and Menna are monitoring ant colonies on the website. Hazem has been monitoring an ant colony with 132,890 ants. Menna has been monitoring an ant colony with 57,024 ants and another colony with 72,999 ants. Who has been monitoring more ants? How many more?

Homework

A coffee pot held 1,425 milliliters of coffee. Rashida filled her mug with 730 milliliters of coffee from the pot. Then she poured 460 milliliters for her friend. How can you find out how much coffee was left in the pot? Select *two* correct answers.

A. Add the 730 milliliters Rashida poured in her mug to the 1,425 total milliliters that were in the coffee pot to begin with. Then subtract the 460 milliliters Rashida poured in her friend's mug.

B. Subtract the 730 milliliters Rashida poured in her mug from the 1,425 milliliters that were in the coffee pot to begin with. Then subtract the 460 milliliters Rashida poured in her friend's mug.

C. Add the 460 milliliters Rashida poured in her friend's mug to the 1,425 total milliliters that were in the coffee pot to begin with. Then subtract the 730 milliliters Rashida poured in her mug.

D. Subtract the 460 milliliters Rashida poured in her friend's mug from the 1,425 total milliliters that were in the coffee pot to begin with. Then subtract the 730 milliliters Rashida poured in her mug.

What is the value of x? $111 + x = 481$

A. 260

B. 370

C. 471

D. 592

A ship entered port with 611 tonnes of cargo. It picked up a 25-tonne shipment of fresh fruit and a 149-tonne shipment of electronics before it left port. How much cargo did the ship leave port with?

A. 437 tonnes

B. 636 tonnes

C. 760 tonnes

D. 785 tonnes

A water truck was filled with 4,000 liters of water. It delivered 1,250 liters to its first client. It delivered 620 liters to its second client. It delivered 2,120 liters to its last client. How much water was left in the truck?

A. 10 liters

B. 50 liters

C. 2,130 liters

D. 7,990 liters

A seamstress had a 21-meter bolt of cloth. She used some of the cloth to make a dress and had 15 meters left over. Let *c* represent the amount of cloth. Which equation represents this problem?

A. $15 - c = 21$

B. $21 - c = 15$

C. $15 + c = 21$

D. $21 + c = 15$



Unit (2) Assessment

[1] Choose the correct answer:

(1) A bakery sold 1,232 loaves in one day, if it sold 876 loaves in the morning. How many loaves did it sell at the evening? ....

ⓐ 356 ⓑ 1,588 ⓒ 520 ⓓ 2,108

(2) Which estimation is reasonable for 816 – 257 ? ....

ⓐ 810 – 260 = 550
ⓒ 800 – 250 = 550
ⓑ 820 – 260 = 560
ⓓ 820 – 250 = 570

(3) The additive identity element is ....

ⓐ 0 ⓑ 1 ⓒ 2 ⓓ 3

(4) Ahmed bought 6 cookies, he ate 4 pieces and 12 have left. If A refers to the total number of cookies, then which of the following is true? ....

ⓐ A = 4 + 12 ⓑ 12 – A = 4 ⓒ A + 12 = 4 ⓓ A + 4 = 12

(5) 34 + 56 = 56 + 34 is called .... property

ⓐ commutative
ⓒ additive-identity
ⓑ associative
ⓓ otherwise

[2] Complete:

(1) If H – 1,590 = 3,410, then H = ...

(2) 3,156 + 5,667 = ...

(3) 102,007 – 456 = ...

(4) 6,542 = ... + 6,542 and is called .... property.

(5) In the opposite bar model, Y = ...

7,620	
Y	4,310

[3] Find:

(1) Ola has 1,200 minutes as a balance of her mobile, she used 700 minutes. Find the left minutes in her balance.

....

(2) There are 142 ants in the 1st bridge and 165 ants in the 2nd bridge. How many ants in the two bridges in all?

....

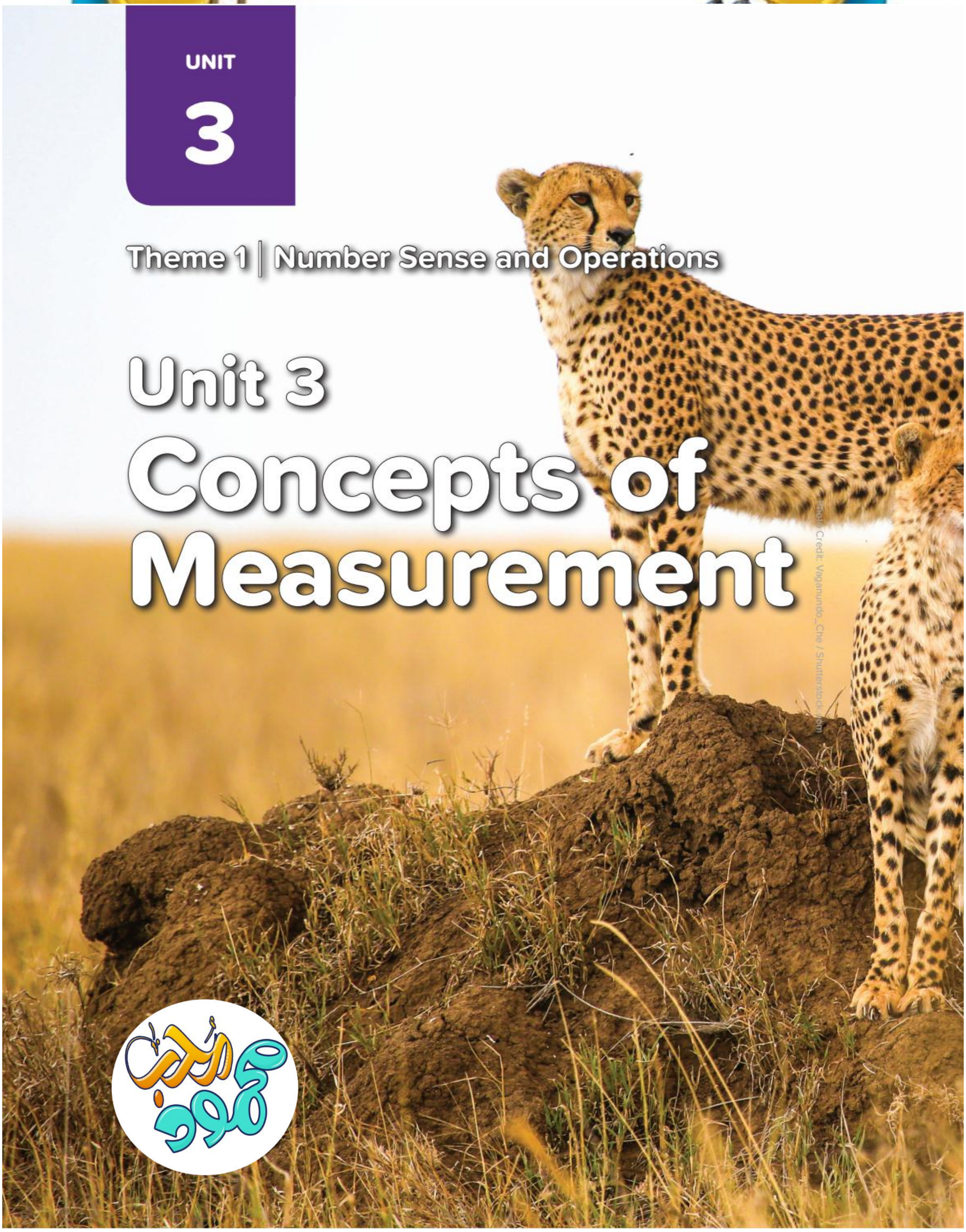




UNIT 3

Theme 1 | Number Sense and Operations

Unit 3
Concepts of Measurement



Concept (1): Metric Measurements

Lesson (1) — Measuring the Length

Measurement Review Circle the best unit to measure each length.

1. Height of a student

   Kilometer Meter Centimeter Millimeter

2. Distance between home and school

   Kilometer Meter Centimeter Millimeter

3. Length of the Nile River

   Kilometer Meter Centimeter Millimeter

4. Length of an ant

   Kilometer Meter Centimeter Millimeter

5. Distance from Cairo to Alexandria

   Kilometer Meter Centimeter Millimeter

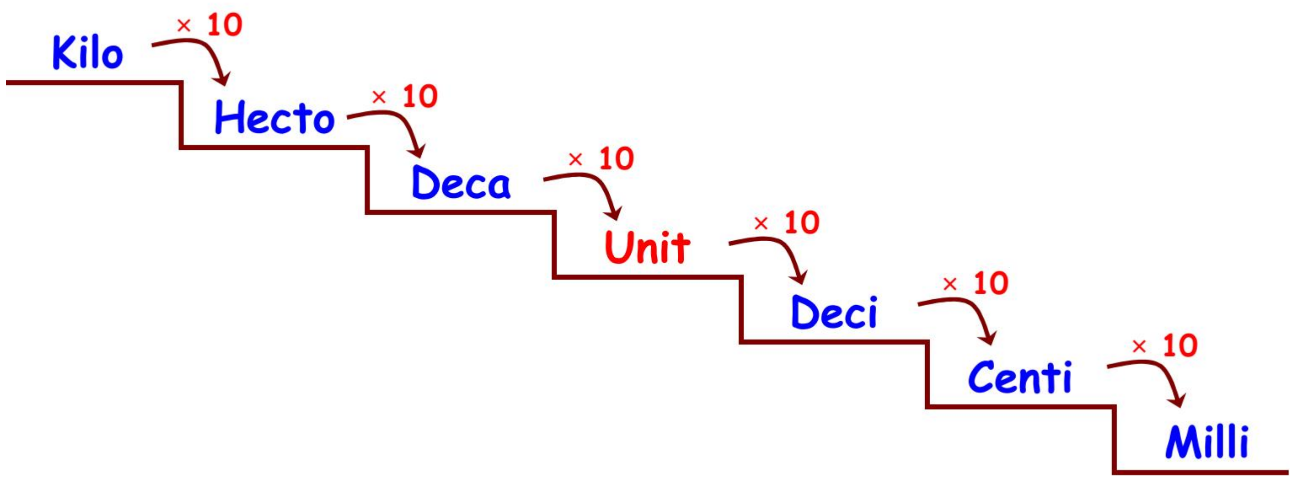
Fill in the blanks to answer the following questions. Think of things that could be measured in each unit.

6. ______________________ is best measured in kilometers

   because ______________________.

Metric Units View and discuss the Metric Conversion chart with your Shoulder Partner.

Kilo-	Hecto-	Deca-	Unit	Deci-	Centi-	Milli-
1,000 units	100 units	10 units	1 unit	1/10 unit	1/100 unit	1/1,000 unit



	Kilometer	Meter
1		1,000
2	3	
3		40,000

	Meter	Centimeter
4	1	
5		300
6	10	

Look at the following example:

140 cm

1 m	40 cm

Convert the following lengths into the given units in the bar models. Use the previous example to help you.

230 cm

7	______ m	______ cm

478 cm

8	______ m	______ cm

______ cm

9	5 m	91 cm

Convert the following.

1. 4 m 18 cm = ______________________ cm
2. 18 m 14 cm = ______________________ cm
3. 8 km 14 m = ______________________ m
4. 27 km 55 m = ______________________ cm

5. If one black ant can walk 250 meters in 1 hour, how many hours will it take to walk 1 kilometer?

6. If the same black ant walked for 10 hours, how far would it go? Express your answer in kilometers and meters.

Lesson (2) Measuring Weight

Work with a partner to complete the conversions. Use the previous example to help you.

1. 3 kg = __________ g
2. 8 kg = __________ g
3. __________ kg = 5,000 g
4. 4 kg = __________ g
5. __________ kg = 30,000 g

6. 4,590 g

_______ kg	_______ g

7. 8,400 g

_______ kg	_______ g

8. _______ g

7 kg	414 g

9. A colony of black ants is estimated to weigh 3,493 grams. Rewrite that number using kilograms and grams.

A different ant colony is estimated to weigh 14 kilograms and 89 grams. Rewrite that weight in grams.

PRACTICE

1. Convert:

   2,456 g = __________ kg __________ g

2. Convert:

   5,235 g = __________ kg __________ g

3. Convert:

   7,324 g = __________ kg __________ g

4. Convert:

   4,535 g = __________ kg __________ g

Lesson (3) Measuring Capacity

1. 6 L = __________ mL
2. 9 L = __________ mL
3. __________ L = 6,000 mL
4. 3 L = __________ mL
5. __________ L = 10,000 mL

9,425 mL

__________ L	__________ mL

6,360 mL

________ L	________ mL

________ mL

8 L	910 mL

A car is filled with 45 liters of petrol. How many milliliters would that be?

A family drank 1 liter 500 milliliters of orange juice at breakfast. If there were 3 liters of orange juice before breakfast, how much orange juice is left?

A car was filled with 20 liters 500 milliliters of petrol. At the end of the day, there were 15 liters 250 milliliters left in the tank. How much petrol was used?

Doha's fish tank contains 5 liters 245 milliliters of water. If the tank can hold 10 liters of water, how much more water does she need to fill the tank?

10. Use the recipe that follows to answer the questions.

Sobia Ingredients:

- 100 g raw short grain rice
- 500 mL of water
- 750 mL cold milk
- 100 g caster sugar
- 5 mL vanilla
- 500 mL coconut milk

Which ingredients are measured by mass?

Which ingredients are measured by capacity?

What is the total amount of liquid ingredients in the drink in milliliters? In liters?

Homework

Convert to centimeters:

1. 6 m =

2. 20 m 10 cm =

Convert to meters:

3. 23 km =

4. 800 km 50 m =

5. A worker ant walked 3,500 meters on Monday to look for food and 2,450 meters on Tuesday to look for food. How far did the ant travel on Monday and Tuesday combined? Express your answer in meters, and then convert to a combination of kilometers and meters.

Convert each of the following.

1. 3,806 g = ____________ kg ____________ g

2. 8 kg 50 g = ____________ g

3. 3,425 g = ____________ kg ____________ g

4. 1 kg 10 g = ____________ g

5. 10,452 g = ____________ kg ____________ g

Express the answers in milliliters.

1. 21 L + 2 L 800 mL =

2. 4 L 485 mL – 323 mL =

Convert.

3. 11 L 342 mL = ____________ mL

4. 16,783 mL = ____________ L ____________ mL

Concept (2): Time and Scaled Measurement

Lesson (4) Measuring Time

Week	Day
1	7
2	
3	
4	
5	
6	
7	
8	
9	
10	

Day	Hour
1	24
2	
3	
4	
5	
6	
7	
8	
9	
10	

Hour	Minute
1	60
2	
3	
4	
5	
6	
7	
8	
9	
10	

Minute	Second
1	60
2	
3	
4	
5	
6	
7	
8	
9	
10	

Solve the conversion problems using the ratio tables above.

5. 10 hours 30 minutes = __________ minutes
6. 6 minutes 15 seconds = __________ seconds
7. 4 days 20 hours = __________ hours

Write the digital time that is shown on each analog clock.

1. 

____

2. 

____

3. 

____

Lesson (5) Elapsed Time

Solving Elapsed Time Problems Solve the problems and write the new time. Based on the examples shown to you by your teacher, try a few different strategies to solve the problems. Show your work.

1. 3:25 + 1:26 = ________
2. 3:25 + 45 minutes = ________
3. 5:43 – 1:25 minutes = ________
4. Jana and Maha have 5 hours to watch three movies that last 1 hour and 22 minutes; 2 hours and 12 minutes; and 1 hour and 57 minutes.

   Do the girls have enough time to watch all three movies? How do you know?

   The girls decide to just watch the two shortest movies. If they start watching them at 5:30 p.m., what time will their movies end?

5. A worker ant went out to find food for the colony. It left at 6:30 a.m. and returned at 7:42 a.m. How long was that ant looking for food?

Concept (3): Measurement All Around

Lesson (6) Measuring the World around Me

1. The potatoes Aya bought weighed 2 kilograms 920 grams. Her onions weighed 1,075 grams less than the potatoes. How much did the potatoes and onions weigh together?

2. A pharaoh ant grows from egg to adult in 45 days. A carpenter ant grows from egg to adult in 12 weeks. Which species takes longer to grow from egg to adult? How much longer?

3. A fish tank with a capacity of 100 liters is filled with 20,000 milliliters of water. How many more liters of water are needed to fill it up completely?

4. Zeina purchased 8 kilograms of sugar, 10 kilograms of flour, 500 grams of cocoa, 225 grams of pecans, and 275 grams of coconut. What is the total mass of her groceries in kilograms?

Mr. Emad bought four 2-liter bottles of soda for the Primary 4 picnic. If there were 2 liters and 829 milliliters of soda remaining at the end of the party, how many milliliters of soda did the students drink?

Worker ants take power naps totaling up to 250 minutes a day. A queen ant may sleep up to 9 hours a day. Which ant sleeps longer and by how many minutes?

Ahmed has a 12-meter-long piece of wood. He wants to cut it into 3 equal lengths. How long should each cut piece be in meters? How long will each of these pieces be in centimeters?

Ayman is a runner. While Ayman is in training, he needs to drink 500 milliliters of water 4 times per day. How many liters of water will that be for 1 week?

Ehab is a weightlifter. He has a mass of 100 kilograms. His aim is to gain 500 grams per week. If he does that for 5 weeks, what will his mass be at the end?

Homework

Solve. Show your work.

1. 3:45 + 25 min = ________

2. 2:45 + 6:17 = ________

3. 3:07 – 42 min = ________

4. 5:07 – 2:13 = ________

5. An ant's first nap of the day began at 7:45 a.m. and lasted for 60 seconds. What time did the ant wake up?

6. The ant then worked in the colony for 3 hours and 13 minutes before its next nap. What time did the ant take his second nap?

A clock is shown.



What time does the clock show?

A. 10:04

B. 10:01

C. 1:10

D. 1:50

Bast's school day is 5 hours long. How can she find how long the school day is in minutes?

- **A.** multiply 5 by 60
- **B.** add 5 and 60
- **C.** multiply 5 by 24
- **D.** add 5 and 24

Bakari is going on a trip for 2 full days. How could he figure out how many hours he will be away?

- **A.** add 2 and 24
- **B.** multiply 2 by 24
- **C.** add 2 and 60
- **D.** multiply 2 by 60

Taher grew 10 centimeters in 1 year. He is now 1 meter 6 centimeters tall. How many centimeters tall was Taher 1 year ago?

An ant from Colony A walked 2 kilometers in a day. An ant from Colony B walked 3,000 meters in a day. Which ant walked the farthest and how much farther in kilometers did it walk?

Ali's cat weighs 7 kilograms and his dog weighs 17 kilograms. When Ali took them to the vet, he learned that his cat gained 450 grams and his dog gained 120 grams. How much do his two pets weigh in all now?

Rania is measuring two ant lines. Colony A's ant line is 30 centimeters long, and Colony B's ant line is 500 millimeters long. How many centimeters long are the two ant lines together?

Amany is a swimmer. She spends half an hour every day swimming. How many minutes in total does she swim for during a 5-day period?

Sara travelled 9 days continuously. She travelled 5,000 meters each day. How many kilometers did she walk in all?

Ants walk about 5,000 meters each day. How many kilometers do ants walk in 6 days?

Samira is studying for an upcoming math test. If she studies for 30 minutes a day, how many hours will she have spent studying in 8 days?

A colony of ants eats approximately 2,000 grams of food each day. If the ants have 10 kilograms of food stored, how many days will the food last?

An ant may walk up to 5 km per day. If the ant continues this for 20 days, how many meters will the ant walk?

Complete.

8 kilograms = ______ grams

7 liters = ______ milliliters

MATHEMATICAL PRACTICE 4 **Use Symbols Algebra** Compare using $<$, $>$, or $=$.

1 kilogram ◯ 900 grams

2 liters ◯ 2,000 milliliters

Unit (3) Assessment

[1] Choose the correct answer:

(1) 423 cm = ... m, ... cm

ⓐ 3m, 42cm ⓑ 42m, 3cm ⓒ 4m, 23cm ⓓ 23m, 4cm

(2) 1 day and 5 hours = ... hours

ⓐ 29 ⓑ 65 ⓒ 15 ⓓ 24

(3) A can of juice of capacity 1 L and 500 ml = ... ml

ⓐ 5,100 ⓑ 1,500 ⓒ 1,005 ⓓ 15,000

(4) 20 kg and 30 gm = ... gm

ⓐ 2,300 ⓑ 2,030 ⓒ 20,030 ⓓ 500

(5) To convert from Liter to Milliliter we ....

ⓐ multiply by 100
ⓑ multiply by 1,000
ⓒ divide by 100
ⓓ divide by 1,000

(6) Nadia spends 7 hours at school, if we want to convert it to minutes, we ....

ⓐ add 7 to 60
ⓑ add 7 to 24
ⓒ multiply 7 by 60
ⓓ multiply 7 by 24

[2] Complete:

(1) 3 minutes and 20 seconds = ... seconds.

(2) 5 kg – 3,000 gm = ... gm.

(3) 45 Liters = ... milliliters.

(4) 27 km and 55 m = ... m.

(5) 3 : 10 + 2 : 18 = ...

[3] Find:

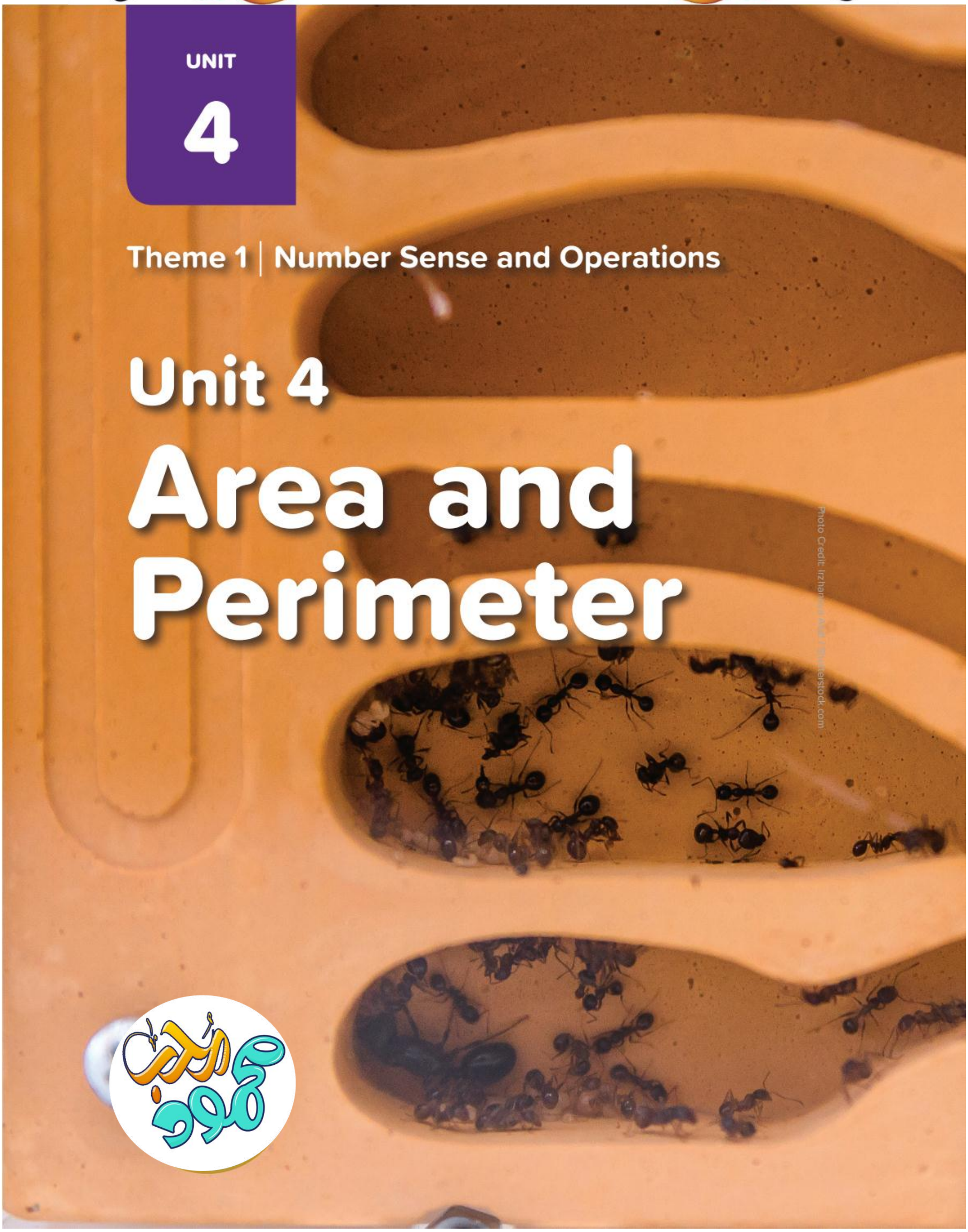
(1) Arrange from least to greatest:
8 m – 8 km – 8,000 cm – 8 mm ....

(2) Basma bought 2 liters of milk, she drank 1,200 milliliters. How much milk was left in milliliters?
....

UNIT 4

Theme 1 | Number Sense and Operations

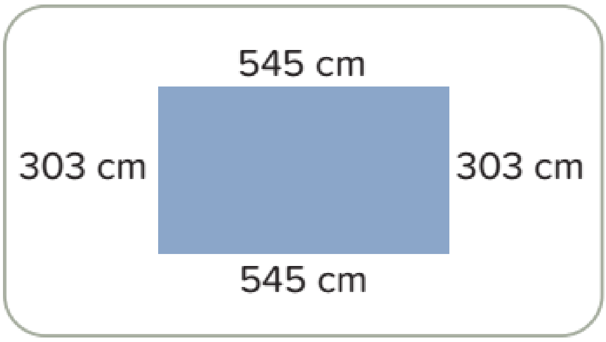
Unit 4
Area and Perimeter

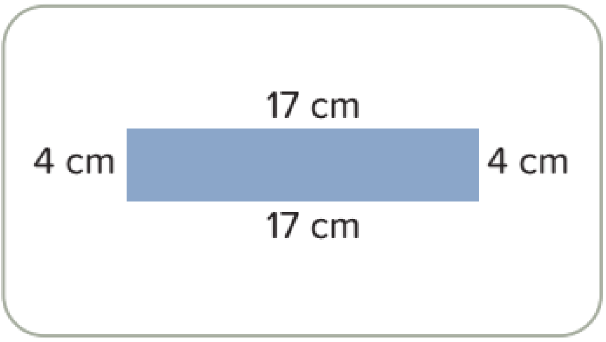


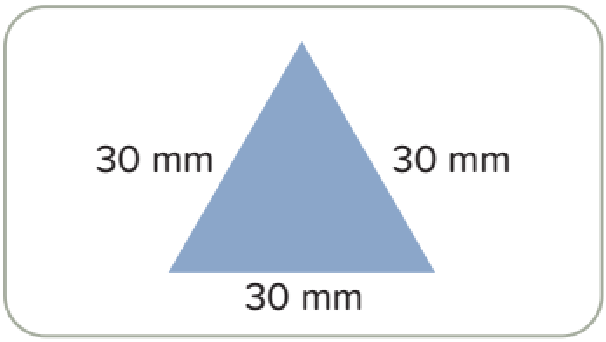
Concept (1): Explore Area and Perimeter

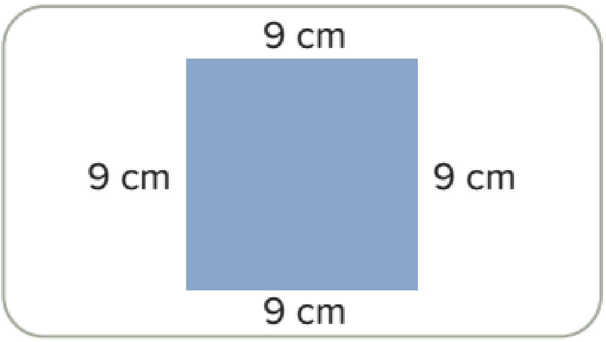
Lesson (1) Calculating the Perimeter

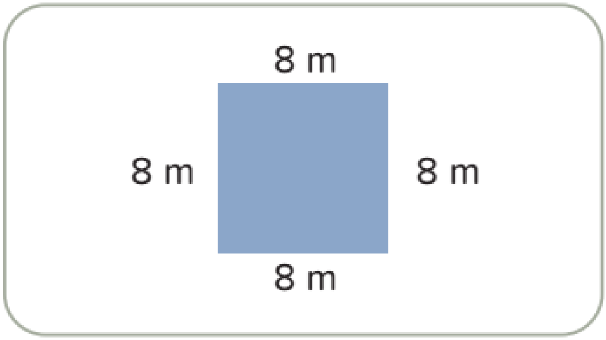
Rectangle Review Compare the shapes in the boxes. Highlight or circle all of the rectangles and place a star on the squares.

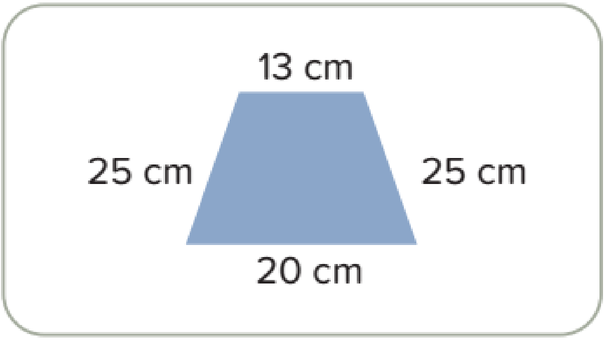


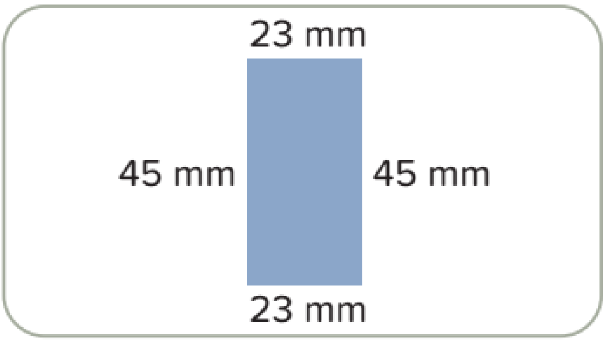






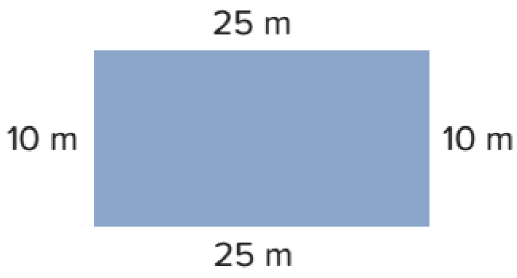








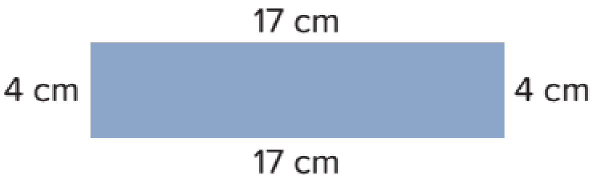
A group of worker ants are in search of food. They secrete pheromones (chemicals) to lay a scent trail. They follow each other in a line around a building. Using the model that follows, what is the perimeter of the building?



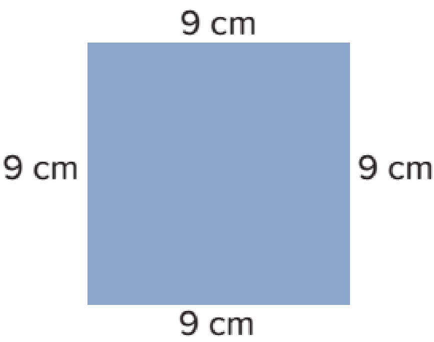

Ant Carrying Food

....

Use the $P = l + w + l + w$ formula to calculate the perimeter of the shapes. Show your work.

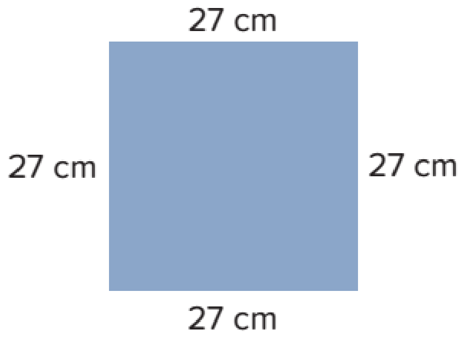


Use the $P = l + w + l + w$ formula to calculate the perimeter of the shapes. Show your work.



Foraging for Formulas Calculate the perimeter of the shapes that follow. Use two different formulas to solve each problem. Show your work.

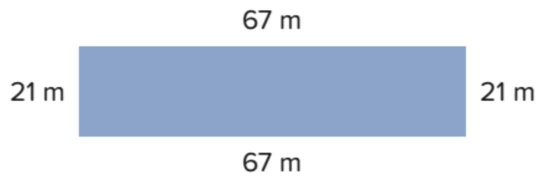
1.



Formula 1: ______________________________

Formula 2: ______________________________

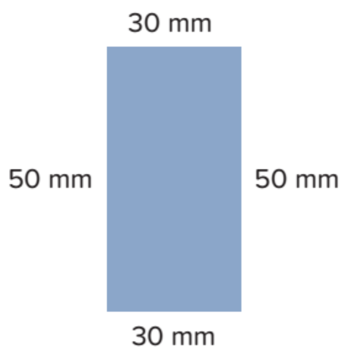
2.



Formula 1: ______________________________

Formula 2: ______________________________

3.



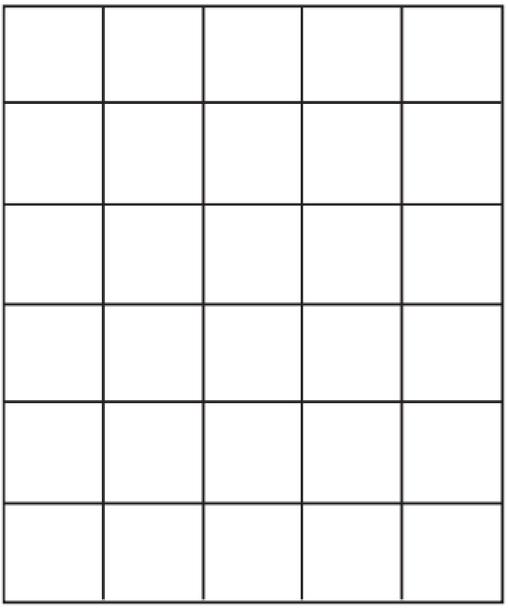
Formula 1: ______________________________

Formula 2: ______________________________

Lesson (2) Calculating the Area

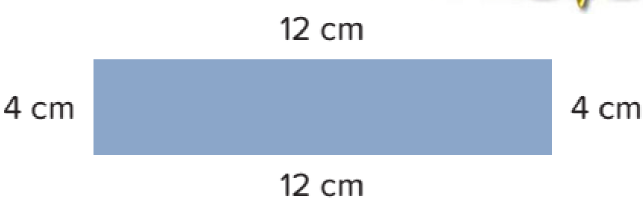
Area Review Determine the area of the rectangles. Show your work.

1.



Area = ____________________

2.

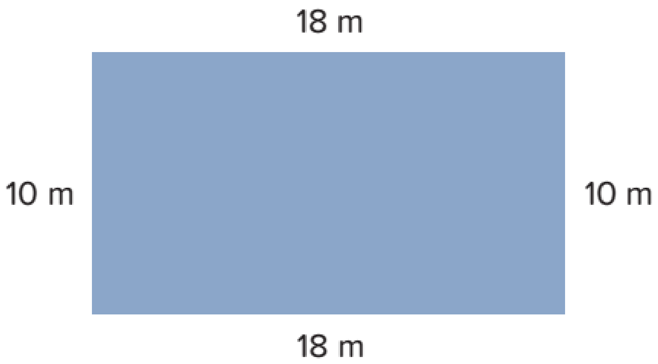


Area = ____________________

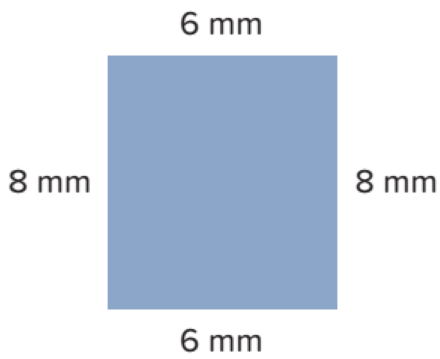


Area Practice Solve the problems. Show your work and label your answers.

1. Find the area.



2. Find the area.



For a science project, two students are creating an ant farm enclosure. Their enclosure will be 5 meters long and 2 meters wide. Sketch the enclosure and label the dimensions. Then, find the perimeter and area.

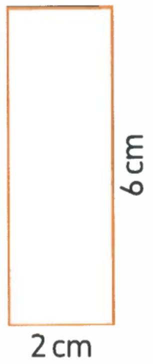
Homework

Which of the figures below have the same perimeter?

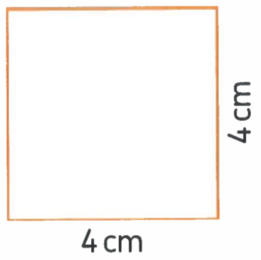
a.



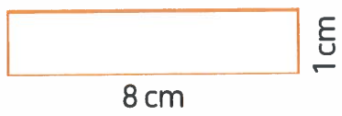
b.



c.

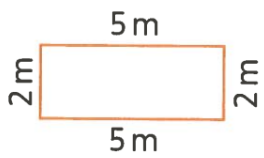


d.



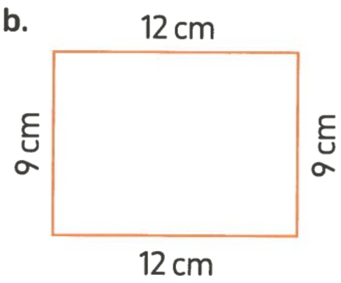
Use the formula $P = l + w + l + w$ to calculate the perimeters of the following rectangles.

a.



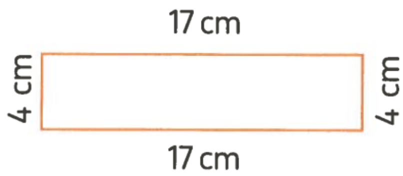
P = ______________

b.



P = ______________

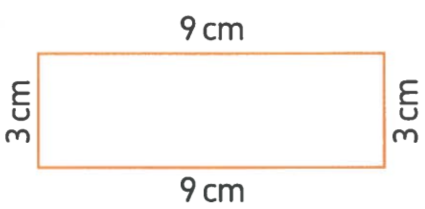
c.



P = ______________

Write the formula of the area of each rectangle or square, then find its area.

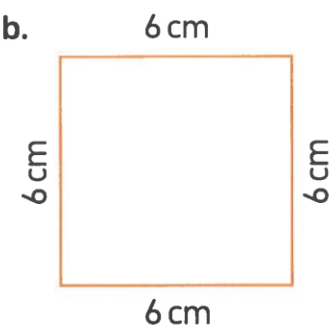
a.



____

____

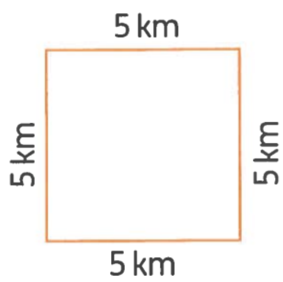
b.



____

____

c.



____

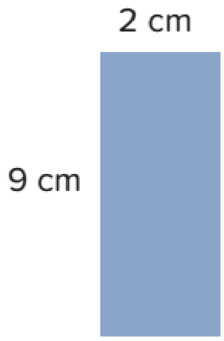
____

3. Sherif is building a square picture frame. Each side will be 36 millimeters long. What will the perimeter of the frame be?

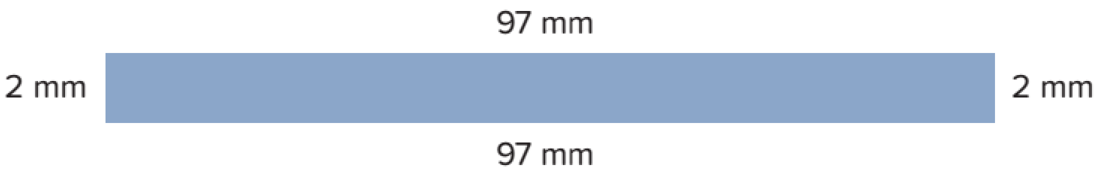
4. Omar is building a rectangular fence around his garden. The length is 8 meters and the width is 6 meters. How many meters of fencing will he need to build?

Find the area and perimeter of the rectangles. Show your work and label your answers.

1.

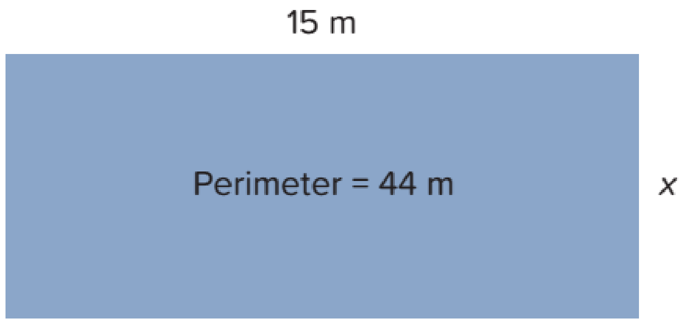


2.



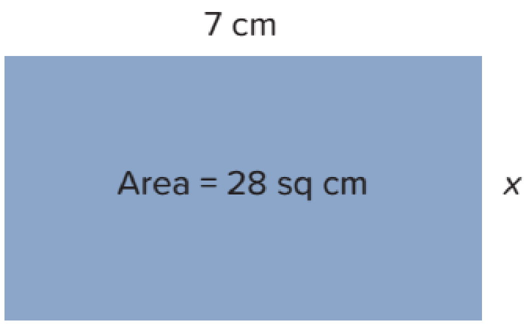
Lesson (3) Missing Dimensions

Find the unknown side length based on the perimeter given.



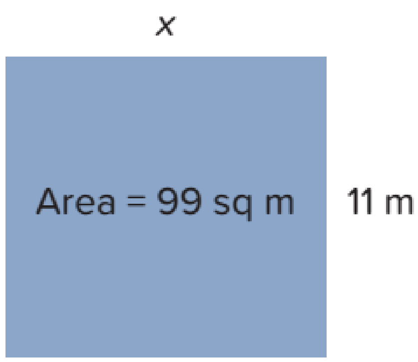
$x =$ ____________________

Find the unknown side length based on the area given.



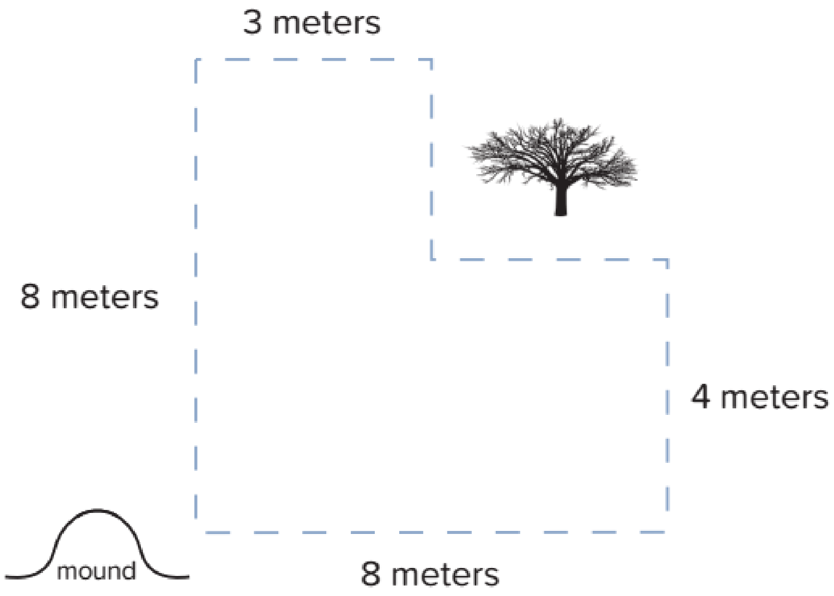
$x =$ ____________________

Find the unknown side length based on the area given.



$x =$ ____________________

Lesson (4) Odd Shapes

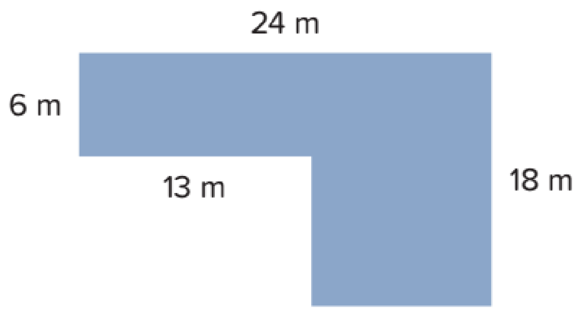


Perimeter = ______________________

Area = ______________________

Calculating Crazy Shapes Solve each problem.

1. Divide this shape into smaller rectangles or squares. Then, calculate its area and perimeter. Show your work.



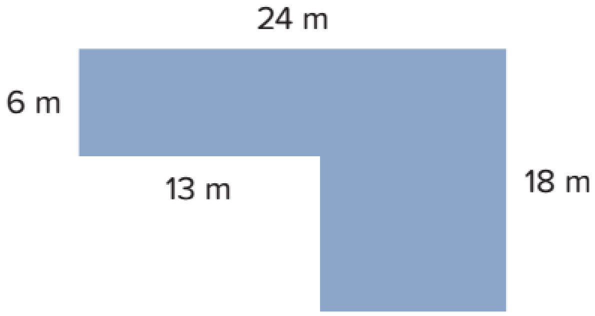
Area = ______________________

____

____

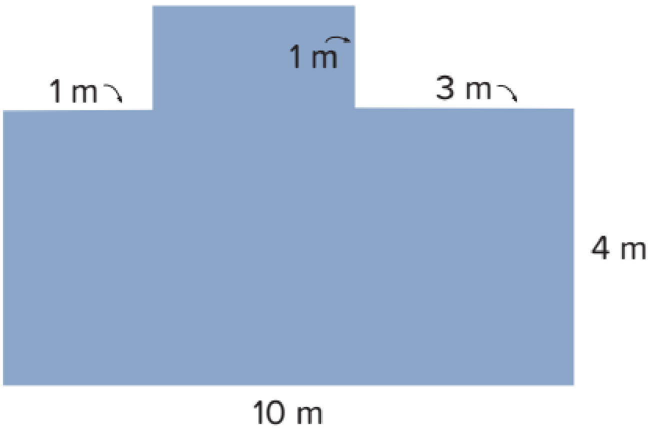
Perimeter = ______________________

2. Divide the shape in a different way and calculate its area and perimeter. Show your work.



Area = ______________________________

Perimeter = ______________________________



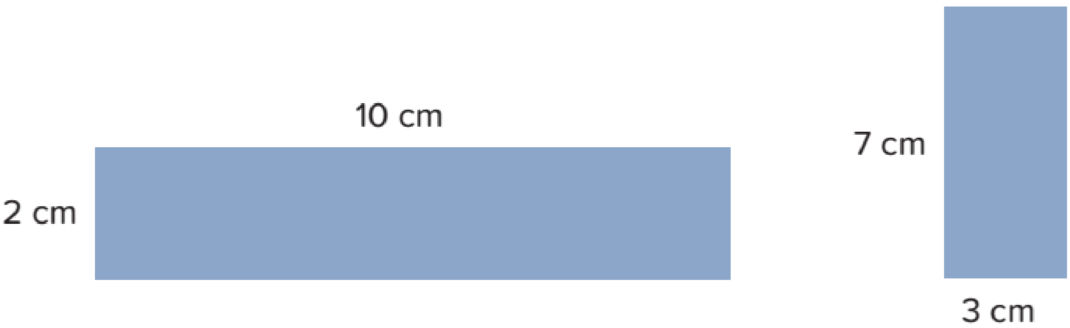
Area = ______________________________

____

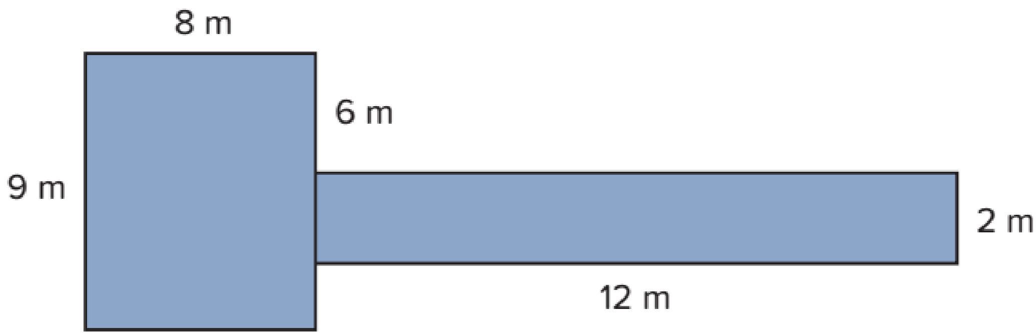
____

Perimeter = ______________________________

Combine these two simple shapes into a complex shape. Sketch your shape, labeling the sides. Then, calculate the area and perimeter of the complex shape.



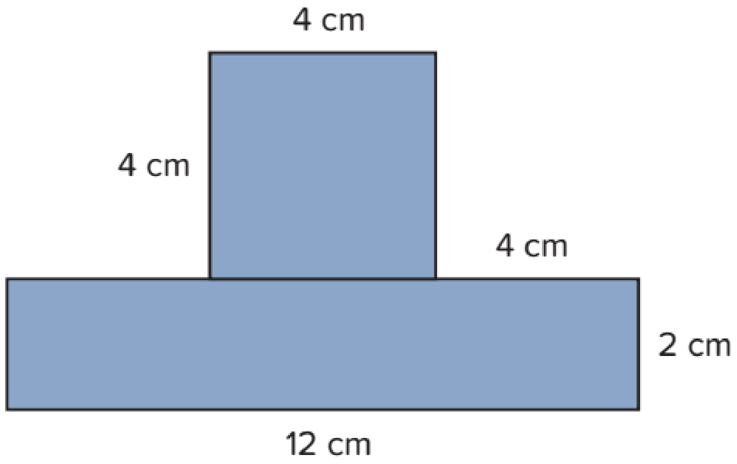
Calculate the area and perimeter.



Area = ______________________________

Perimeter = ______________________________

Calculate the area and perimeter.



Area = ______________________________

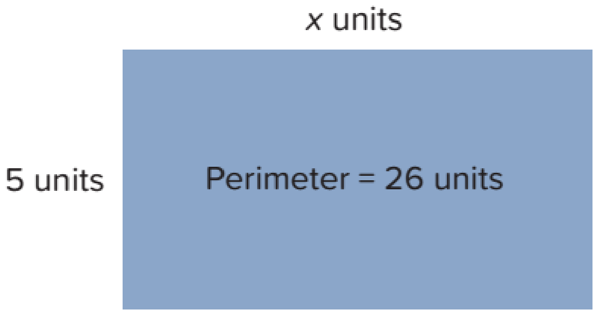
Perimeter = ______________________________

The summary

	Rectangle	Square
Area	A = L × W	A = L × L
Perimeter	P = (L + W) × 2	P = L × 4

Homework

Mystery Dimension Work with a partner to answer the questions about the rectangles.

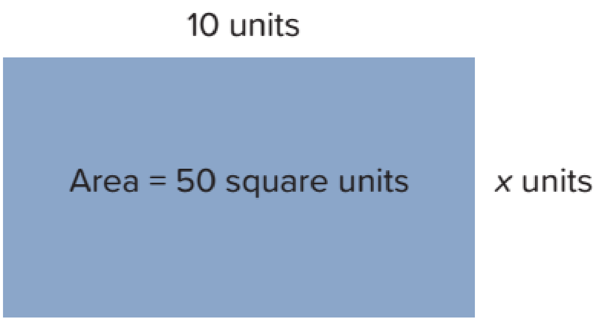


1. What is known about this rectangle?

____

2. What is unknown about this rectangle?

____

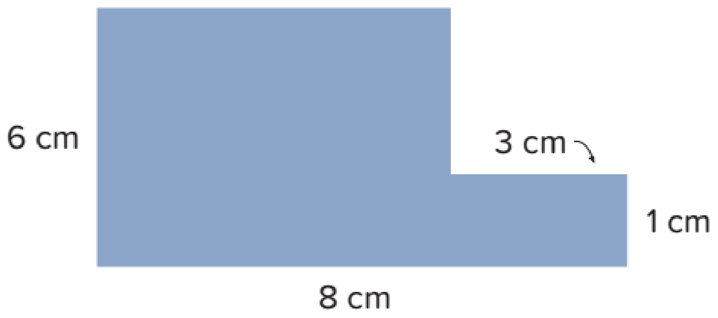


What is known about this rectangle?

____

What is unknown about this rectangle?

____



Area = ______________________________

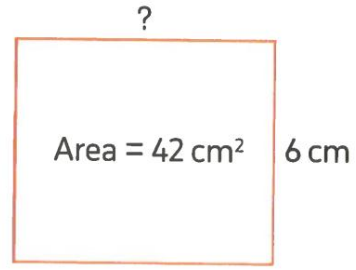
____

____

Perimeter = ______________________________

▸ **Find the unknown length in each of the following rectangles of squares.**

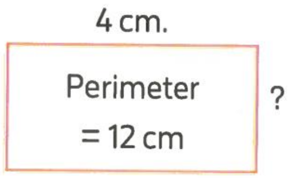
a.



____

____

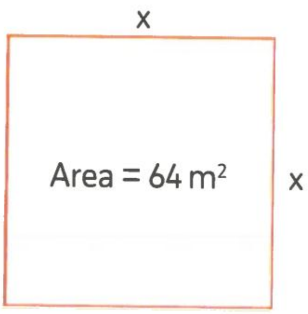
b.



____

____

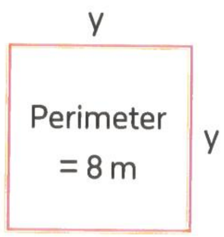
c.



____

____

d.



____

____





Choose the correct answer:

1	The perimeter of a square = ... A) L X L B) L X 4 C) L X W D) (L+W) X 2
2	The area of a square = ... A) L X L B) L X 4 C) L X W D) (L+W) X 2
3	The perimeter of a rectangle = ... A) L X L B) L X 4 C) L X W D) (L+W) X 2
4	The area of a rectangle = ... A) L X L B) L X 4 C) L X W D) (L+W) X 2
5	The perimeter of a square of side length is 3 cm = ... cm A) 12 B) 20 C) 16 D) 28
6	The perimeter of a square of side length is 5 cm = ... cm A) 12 B) 20 C) 16 D) 28
7	The perimeter of a square of side length is 4 cm = ... cm A) 12 B) 20 C) 16 D) 28
8	The perimeter of a square of side length is 7 cm = ... cm A) 12 B) 20 C) 16 D) 28
9	The area of a square of side length is 3 cm = ... A) 9 cm B) 9 cm^2 C) 12 cm^2 D) 12 cm
10	The area of a square of side length is 4 cm = ... cm^2 A) 8 B) 16 C) 36 D) 81
11	The area of a square of side length is 5 cm = ... A) 25 cm B) 25 cm^2 C) 20 cm^2 D) 20 cm
12	The area of a square of side length is 6 cm = ... cm^2 A) 36 B) 24 C) 60 D) 12
13	The side length of a square of perimeter is 24 cm = ... cm A) 9 B) 4 C) 5 D) 6
14	The side length of a square of perimeter is 36 cm = ... cm A) 9 B) 4 C) 5 D) 7

Unit (4) Assessment

[1] Choose the correct answer:

(1) A square of side length S, its perimeter = ...

ⓐ S + 4 ⓑ S ÷ 4 ⓒ S × 4 ⓓ S × S

(2) If the perimeter of a rectangle 20 cm, its width 4 cm. Its length = ... cm

ⓐ 4 ⓑ 5 ⓒ 10 ⓓ 6

(3) A rectangle of dimensions 20 cm and 10 cm, its area = ... cm^2.

ⓐ 10 + 20 × 2 ⓑ 10 + 20 ⓒ 60 ⓓ 200

(4) A rectangle whose length is L and width is W, its area = ...

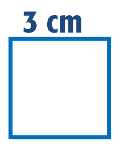
ⓐ (2 × L) + W ⓑ L × W ⓒ (L + W) × 2 ⓓ L + W

[2] Complete:



(1) The area of the opposite rectangle = ... cm^2.

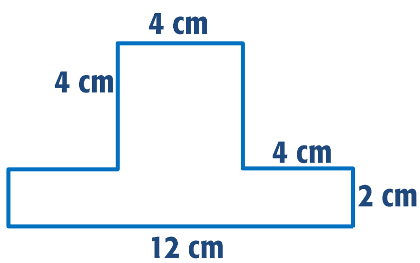
(2) A rectangle of dimensions 20 cm and 10 cm,
its perimeter = ... cm.



(3) The perimeter of the opposite square = ... cm.

[3] Find:

(1) Find the area and perimeter of the opposite figure:



....

....

....

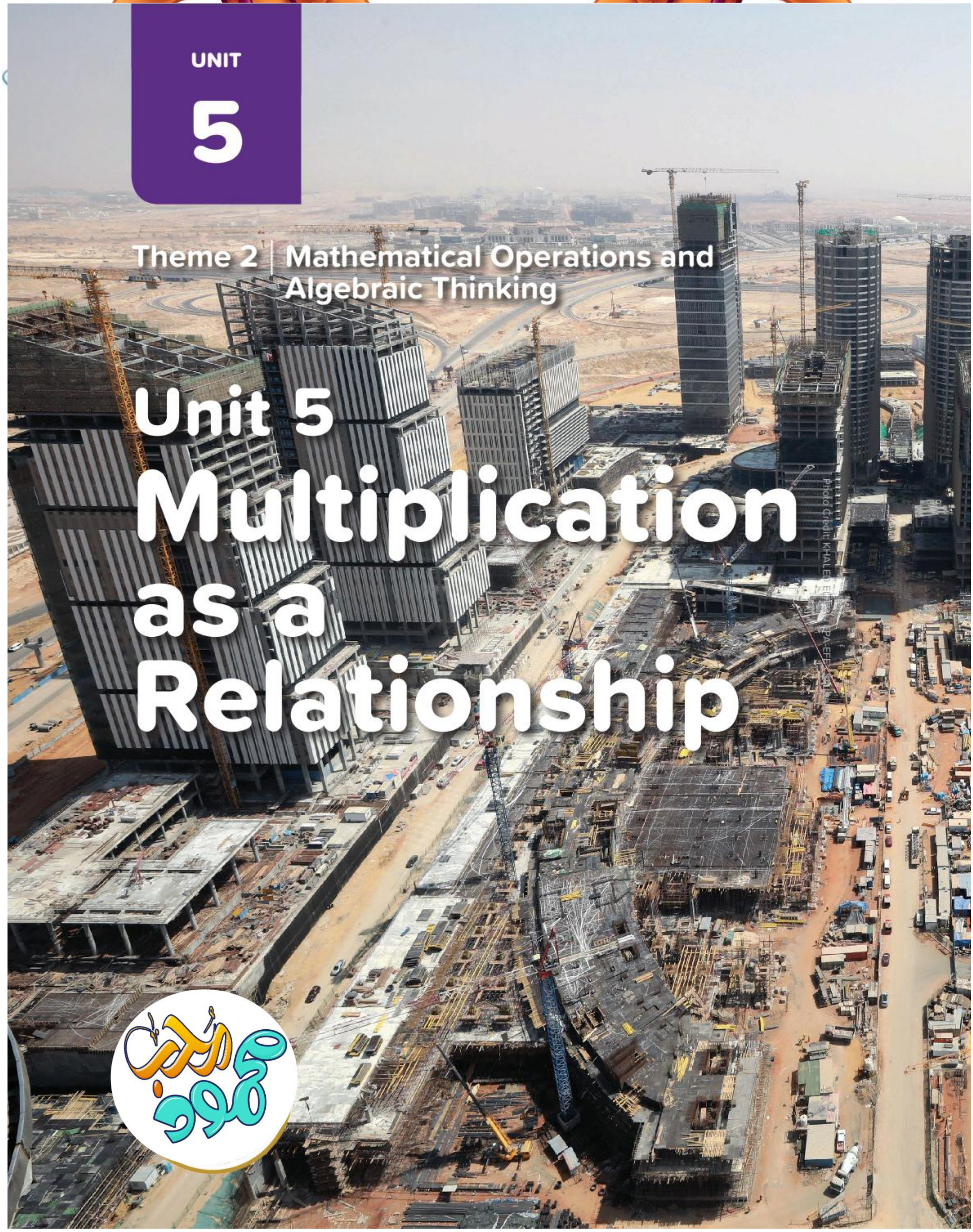
....

....

....







UNIT 5

Theme 2 | Mathematical Operations and Algebraic Thinking

Unit 5 Multiplication as a Relationship

Concept (1): Multiplicative Comparisons

Lesson (1) — Understanding Multiplicative Comparison

1. Compare 10 and 2. 10 is ______ times greater than 2.
2. Compare 12 and 3. 12 is ______ times greater than 3.
3. Compare 18 and 6. 18 is ______ times greater than 6.

Which statement is an example of a multiplicative comparison?

A. A camel is 3 meters in length. A crocodile is 2 meters longer than a camel.

B. A camel can weigh up to 1,000 kilograms. This is twice as much as a crocodile weighs.

C. Crocodiles have 64 teeth. Camels have 32 fewer teeth than crocodiles.

D. There are about 30,000 crocodiles in Egypt. There are about 60,000 more camels in Egypt.

Rewrite each equation using multiplication.

1. 6 + 6 + 6 = 18 ______________________
2. 2 + 2 + 2 + 2 + 2 + 2 + 2 = 14 ______________________

Fill in the blanks to complete the multiplicative comparison statement for each tape diagram.

3.

5	5	5	5

_______ is _______ times greater than 5.

4.

8	8	8

_______ is _______ times greater than 8.

A building is 20 meters tall. A bridge is 5 meters tall. The building is how many times taller than the bridge?

A. 3

B. 4

C. 15

D. 100

Akil is twice as old as his brother. His brother is 8 years old. Which two equations can be used to find Akil's age?

A. $2 + a = 8$

B. $2 \times a = 8$

C. $2 \times 8 = a$

D. $8 + 2 = a$

E. $8 + 8 = a$

Lesson (2) Creating Multiplicative Comparison Equations

Multiplying to Show Comparisons Write an equation based on the comparison statement. Use a letter to represent the unknown number. You do not have to solve the equations.

1. 4 times greater than 3 is ______________________
2. 18 is 6 times as many as ______________________
3. 2 times greater than 7 is ______________________
4. 24 is 4 times as great as ______________________
5. 25 is 5 times as many as ______________________

Lesson (3) Solving Multiplicative Comparison Equations

How Many Seats? Use the information in the table to compare numbers of seats in different modes of transportation. Then, enter and solve an equation for each comparison.

Mode of Transportation	Number of Seats
Bicycle	1
Motorbike	2
Car	4
Truck	6
Bus	36
Metro Train	48

1. How many times as many seats are in a truck than on a motorbike?

   Equation: ______________________

   Answer: ______________________

2. How many times as many seats are on a bus than in a truck?

   Equation: ______________________

   Answer: ______________________

3. How many times as many seats are on the metro train than in a car?

   Equation: ______________________

   Answer: ______________________

4. A metro train can fit how many times more people than a truck?

   Equation: ______________________

   Answer: ______________________

5. A bus has how many times more seats than a car?

   Equation: ______________________

   Answer: ______________________

Homework

1. Compare 15 and 3. 15 is ________ times greater than 3.
2. Compare 28 and 7. 28 is ________ times greater than 7.
3. Compare 27 and 9. 27 is ________ times greater than 9.

Khepri and her sister peeled oranges. Khepri peeled 6 oranges. Khepri's sister peeled 3 times as many oranges as Khepri. Which equation can be solved to find the number of oranges that Khepri's sister peeled?

A. $6 + 3 = n$

B. $6 \times 3 = n$

C. $n + 3 = 6$

D. $n \times 3 = 6$

A fish tank has 3 red fish and 17 times as many blue fish. How many blue fish are in the tank?

A. 20

B. 31

C. 17

D. 51

Write an equation for each of the following comparisons, and then solve.

1. What number is 5 times greater than 6?

____

2. 36 is 4 times more than what number?

____

3. Ayman ate 4 figs in the morning. His older brother ate 3 times as many. How many figs did his brother eat?

____

Concept (2)
Properties and Patterns of Multiplication

Lesson (4) Commutative Property of Multiplication

Hands-on Activity: Arrays and the Commutative Property

Array Equation 1: 2 x 4 = ______ x ______

Array Equation 2: 3 x 7 = ______ x ______

Array Equation 3: 5 x 9 = ______ x ______

Array Equation 4: 6 x 8 = ______ x ______

Array Equation 5: 1 x 3 = ______ x ______

Apply the Commutative Property of Multiplication to complete each equation.

1. 5 x 7 = ________ x 5

2. 20 x ________ = 6 x 20

Which equation would be best to include in an explanation of the Commutative Property of Multiplication?

A. 3 × 5 = 5 × 3

B. 4 × 16 = (4 × 11) + (4 × 5)

C. (6 × 4) × 2 = 6 × (4 × 2)

D. 5 × 1 = 5

Lesson (5) Patterns of Multiplying by 10s

Which number is the result of multiplying a single-digit number by 10?

A. 14

B. 80

C. 400

D. 810

Products
1 × 10 = 10
5 × 10 = 50
9 × 10 = 90
13 × 10 = 130
17 × 10 = 170
21 × 10 = 210

Mental Math Number Talk Look at the problems below. Solve them mentally (without writing anything down).

1. 5 x 1
2. 12 x 1
3. 672 x 1
4. 8 x 0
5. 16 x 0
6. 758 x 0

Which equation shows how to apply the Associative Property of Multiplication to determine the value of 3 × (2 × 10)?

A. 5 × 10 = 50

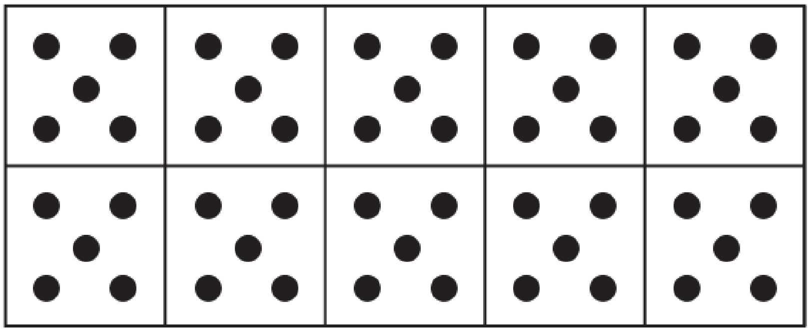
B. 6 × 10 = 60

C. 3 × 20 = 320

D. 3 × 12 = 36

Lesson (6) Exploring More Patterns in Multiplication

Dot Card Number Talk Look at the image. How many dots do you see in the image below? How did you come up with your answer?



Uncovering the Associative Property of Multiplication Solve the problem assigned by your teacher.

Problem 1: 3 x 2 x 4 = ______

Problem 2: 4 x 2 x 3 = ______

Applying the Associative Property of Multiplication Work with a partner to solve the problems. Place parentheses around the factors that you will multiply first. Rewrite the factors in another order if helpful.

1. 3 x 2 x 5 = ______
2. 4 x 6 x 2 = ______
3. 2 x 9 x 3 = ______
4. 3 x 2 x 3 = ______

Solve each problem. Multiply the part in the parentheses first.
Show your work.

1. (2 x 3) x 4 = ____________________

2. (5 x 2) x 3 = ____________________

3. 2 x (3 x 4) = ____________________

4. 5 x (2 x 3) = ____________________

Write how many Tens make up each number.

7. 30 = ______ Tens

8. 80 = ______ Tens

9. 160 = ______ Tens

10. 140 = ______ Tens

11. 120 = ______ Tens

12. 110 = ______ Tens

Decompose each multiple of 10, 100, or 1,000 before multiplying.
Draw parentheses around the numbers you would multiply first,
and then write the answer.

1. 5 x 70 = ____

2. 8 x 30 = ____

3. 4 x 40 = ____

Solve using a strategy you prefer.

4. 6 x 90 =

____

Homework

Apply the Commutative Property of Multiplication to find the unknown value.

3. $33 \times 4 = 4 \times a$ ______________________

4. $b \times 9 = 9 \times 8$ ______________________

Which equation would be best to include in an explanation of the Associative Property of Multiplication?

A. $(9 \times 12) \times 0 = 0$

B. $(4 \times 6) \times 1 = 4 \times 6$

C. $(3 \times 7) \times 2 = 3 \times (7 \times 2)$

D. $(11 \times 8) \times 9 = 9 \times (11 \times 8)$

Place parentheses to show one way to find the product. Then, show one other way to use parentheses to find the product.

5. $5 \times 4 \times 2$

____

6. $3 \times 6 \times 2$

____

Decomposing Multiples of 10 Decompose each number into a factor pair with 10. Write the missing factor in the box.

1. 40 — 10 — ☐
2. 20 — 10 — ☐
3. 70 — 10 — ☐
4. 50 — 10 — ☐
5. 90 — 10 — ☐
6. 110 — 10 — ☐

Choose the *best* numbers to complete the equation.

6	7	36	42

A model is shown.

42						
6	6	6	6	6	6	6

Which equation is best represented by this model?

6 × ____________ = ____________

Unit (5) Assessment

[1] Choose the correct answer:

(1) The multiplicative identity element is ....

ⓐ 0 ⓑ 1 ⓒ 2 ⓓ 3

(2) Which of the following represents the commutative property of multiplication?

ⓐ $5 \times 16 = (5 \times 11) + (5 \times 5)$ ⓒ $3 \times 1 = 3$

ⓑ $(6 \times 2) \times 4 = 6 \times (2 \times 4)$ ⓓ $6 \times 9 = 9 \times 6$

(3) $50 \times 1{,}000 =$ ....

ⓐ 5,000 ⓑ 500 ⓒ 50,000 ⓓ 50

(4) The numerical expression that represents: 3 times greater than 8 is 24 is ....

ⓐ $3 \times 8 = 24$ ⓑ $24 \times 8 = 3$ ⓒ $8 \times 8 = 24$ ⓓ $3 \times 24 = 8$

(5) If $a \times 31 = 31 \times 9$, then a = ...

ⓐ 40 ⓑ 31 ⓒ 1 ⓓ 9

(6) $(2 \times 3) \times 4 =$ ....

ⓐ 243 ⓑ 64 ⓒ $(2 + 3) \times 4$ ⓓ $2 \times (3 \times 4)$

(7) 6 times greater than 5 = ...

ⓐ 56 ⓑ 15 ⓒ 30 ⓓ 24

[2] Complete:

(1) 9 times greater than 3 = ...

(2) $35 \times 0 =$ .... and called .... property

(3) If $k = 7 \times 5$, then k = ...

(4) $5 \times 7 \times 2 =$ ....

(5) $(5 \times 3) \times 7 = 5 \times ($...... $\times 7)$

[3] Find:

(1) Ahmed read 5 books. Mohamed read 3 times more than Ahmed. Find the number of books that Mohamed read? ....

(2) Kareem has 9 pens, Ali has 27 pens. Ali is how many times more than Kareem?
....

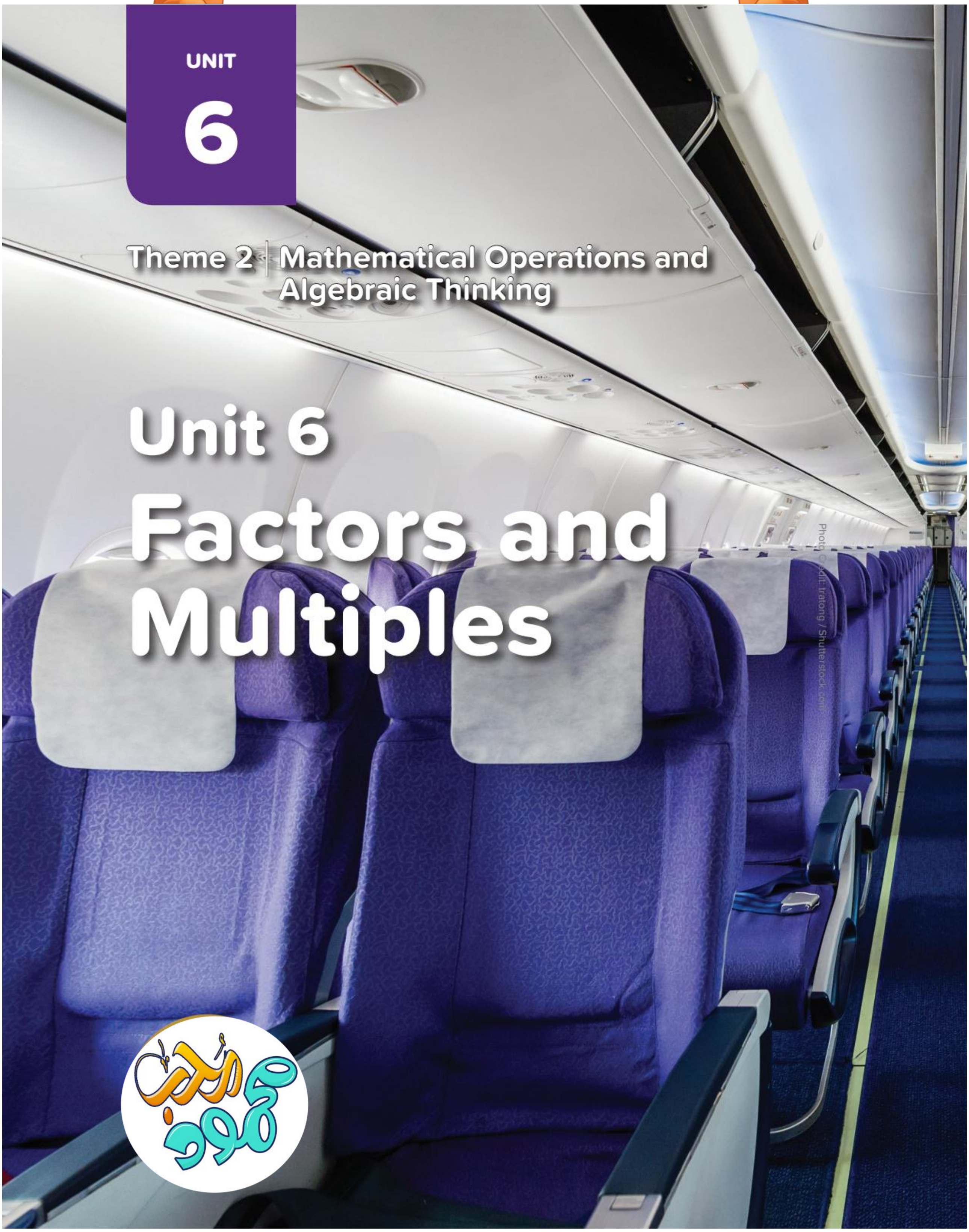




UNIT 6

Theme 2 | Mathematical Operations and Algebraic Thinking

Unit 6 Factors and Multiples

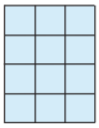


Concept (1): Understanding Factors

Lesson (1) Identifying Factors of Whole Numbers

1. Use the arrays to name the factors of 12.







_____ × _____ = 12 _____ × _____ = 12 _____ × _____ = 12

The factors of 12 are 1, _____, 3, _____, 6, and _____.

Use tiles to find all the factors of the product. Record the arrays and write the factors shown.

2. 5: ____________________

3. 20: ____________________

4. 25: ____________________

Count by 2s. Shade the numbers that you say as you count.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Count by 5s. Shade the numbers that you say as you count.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Count by 10s. Shade the numbers that you say as you count.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Determine if the given number has 2 as a factor, 5 as a factor, or 10 as a factor. Circle yes or no.

	Number	Is 2 a factor?		Is 5 a factor?		Is 10 a factor?	
1	26	Yes	No	Yes	No	Yes	No
2	70	Yes	No	Yes	No	Yes	No
3	15	Yes	No	Yes	No	Yes	No
4	17	Yes	No	Yes	No	Yes	No

THINK SMARTER Sarah was organizing vocabulary words using index cards. She arranged 40 index cards in the shape of a rectangle on a poster. For 14a–14e, choose Yes or No to tell whether a possible arrangement of cards is shown.

14a. 4 rows of 10 cards ○ Yes ○ No

14b. 6 rows of 8 cards ○ Yes ○ No

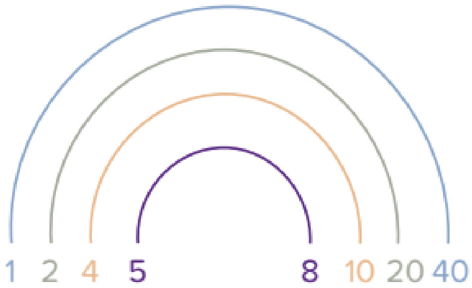
14c. 20 rows of 2 cards ○ Yes ○ No

14d. 40 rows of 1 card ○ Yes ○ No

14e. 35 rows of 5 cards ○ Yes ○ No

Show students how to create a T-chart using the factors of 40.

1	40
2	20
4	10
5	8



Finding Factor Pairs Work with your teacher to create a factor rainbow and T-chart for 40.

1. List the factors of 40.

Factor Rainbow **T-Chart**

2. List the factors of 36. There are 5 factor pairs.

Factor Rainbow **T-Chart**

3. List the factors of 20. There are 3 factor pairs.

Factor Rainbow **T-Chart**

Lesson (2) Prime and Composite Numbers

- The prime number is a whole number that has only 2 factors.
- The prime number is divisible only by 1 and itself.
- 2 is the smallest prime number.
- 3 is the smallest odd prime number.
- 2 is the only even prime number.
- All prime numbers are odd except 2

Prime Numbers less than 100:

2	3	5	7
11	13	17	19
23	29		
31	37		
41	43	47	
53	59		
61	67		
71	73	79	
83	89		
97			

Lesson (3) Greatest Common Factor (GCF)

A class is going on a field trip. There are 36 girls and 27 boys in the class. Students will be divided into groups of girls and groups of boys. What is the greatest number of groups that can be made so that each group has the same number of children? How many children will be in each group of boys? How many children will be in each group of girls?

Find the greatest common factor (GCF) of the given numbers.

4. 40 and 48

5. 12 and 18

6. 10 and 45

Homework

Highlight or circle the factors of the numbers listed.

1. 15: 2 5 10
2. 30: 2 5 10
3. 12: 2 5 10
4. 25: 2 5 10
5. 36: 2 5 10

List all of the factors of each number. You may create a factor tree, factor rainbow, or factor T-chart.

6. 25:
7. 19:
8. 48:
9. 16:

Is 9 a factor of the number? Write *yes* or *no*.

6. 54 ______ **7.** 63 ______ **8.** 67 ______ **9.** 93 ______

Color the prime numbers in red:

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	15	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

List all the factors of each number. Then, write if the number is prime or composite.

1. 14

2. 46

3. 22

4. 59

5. 50

6. 29

Choose the best words or numbers to complete each statement.

correct	1, 2, 3, 6	1, 2, 3, 6	3
incorrect	1, 2, 3, 6, 9, 18	1, 2, 3, 6, 9, 18	6
	1, 2, 3, 4, 6, 8, 12, 24	1, 2, 3, 4, 6, 8, 12, 24	12

Femi said the greatest common factor of 18 and 24 was 12.

Femi was ______________________ because the factors of 18 are

________________________________ and the factors of 24 are

________________________________. The greatest common factor of

18 and 24 is __________.

Concept (2): Understanding Multiples

Lesson (4) Identifying Multiples of Whole Numbers

The product of two numbers is a multiple of each number. Factors and multiples are related.

$$3 \times 4 = 12$$

- 3 ↑ factor
- 4 ↑ factor
- 12 ↑ multiple of 3, multiple of 4

Is the number a multiple of 6? Write *yes* or *no*.

6. 3 ______ **7.** 6 ______ **8.** 16 ______ **9.** 18 ______

Is the number a multiple of 3? Write *yes* or *no*.

10. 4 ______ **11.** 8 ______ **12.** 24 ______ **13.** 38 ______

MATHEMATICAL PRACTICE 8 **Generalize Algebra** **Find the unknown number.**

15. 12, 24, 36, ______

16. 25, 50, 75, 100, ______

Lesson (5) Common Multiples

14. List the next nine multiples of each number. Find the common multiples.

Multiples of 2: 2, ____________________

Multiples of 8: 8, ____________________

Common multiples: ____________________

PRACTICE

1. Find a common multiple of 4 and 8:

2. Find a common multiple of 7 and 3:

3. Find two common multiples of 2 and 6:

4. Find two common multiples of 4 and 6

5. Which is a common multiple of 5 and 8: 20, 40, 35

6. Which is NOT a common multiple of 9 and 6: 18, 27, 36

Lesson (6) Relationships between Factors and Multiples

Think about the relationships between the numbers in each group.
Write at least two sentences describing what you notice.

1. 3, 6, and 12

2. 4, 8, 16, and 24

3. How are factors and multiples related?

Which list of numbers are all common multiples of 3 and 7?

A. 1, 3, 7

B. 21, 42, 63

C. 21, 28, 35

D. 15, 21, 27

Is 27 a multiple of 9?

A. yes, because factors of 27 are 3 and 9

B. no, because factors of 9 are 1 and 9

C. no, because multiples of 27 are 9 and 243

D. yes, because multiples of 27 are 9 and 3

Bes thinks 12 is a factor of 36. Is he correct?

A. no, because 36 is not a factor of 12

B. yes, because 12 is not a multiple of 36

C. no, because 12 and 36 are evenly divisible by 2

D. yes, because 12 can be evenly multiplied to equal 36

THINK SMARTER For numbers 29a–29e, select True or False for each statement.

29a.	The number 45 is a multiple of 9.	○ True	○ False
29b.	The number 4 is a multiple of 16.	○ True	○ False
29c.	The number 28 is a multiple of 4.	○ True	○ False
29d.	The number 4 is a factor of 28.	○ True	○ False
29e.	The number 32 is a factor of 8.	○ True	○ False

Homework

Choose the correct answer:

1	Number of factors of 3 is …………………………… A) 2 B) 3 C) 4 D) 5
2	Number of factors of 8 is …………………………… A) 2 B) 3 C) 4 D) 5
3	Number of factors of 9 is …………………………… A) 2 B) 3 C) 4 D) 5
4	The number 12 has …………………………… factors A) 3 B) 4 C) 5 D) 6
5	3 is a factor of …………………………… A) 35 B) 20 C) 27 D) 31
6	3 is a factor of …………………………… A) 18 B) 20 C) 25 D) 31
7	…………………………… is a factor of 6 A) 2 B) 5 C) 7 D) 9
8	…………………………… is a factor of 12 A) 5 B) 3 C) 9 D) 10
9	The number that is divisible by 2 is called …………………. A) Odd B) Even C) Prime D) Otherwise
10	The number that has only two factors is …………………. A) 2 B) 10 C) 6 D) 9
11	The smallest even prime number is …………………. A) 0 B) 1 C) 2 D) 3
12	…………………. Is a prime number. A) 4 B) 6 C) 8 D) 7

13	…………………. Is a prime number. A) 11 B) 6 C) 8 D) 10
14	From the prime numbers …………………. A) 31 B) 10 C) 12 D) 16
15	………………….Is a prime factor of 10 A) 1 B) 6 C) 5 D) 10
16	…………………. Is a prime number between 30 and 40 is A) 33 B) 35 C) 37 D) 39
17	…………………. Is a prime number between 32 and 40 is A) 33 B) 35 C) 37 D) 39
18	The number whose prime factors are 2 , 2 , 2 and 3 is …………………. A) 20 B) 22 C) 24 D) 28
19	Number of factors of 4 is …………………………… A) 2 B) 3 C) 4 D) 5
20	Number of factors of 11 is …………………………… A) 2 B) 3 C) 4 D) 5
21	The number 18 has …………………………… factors A) 3 B) 4 C) 5 D) 6
22	5 is a factor of …………………………… A) 25 B) 8 C) 16 D) 24
23	……………………………is a factor of 6 A) 10 B) 1 C) 7 D) 9
24	…………………………… is a factor of 12 A) 5 B) 7 C) 4 D) 10
25	The number that has only two factors is …………………. A) 12 B) 7 C) 6 D) 9
26	The only even prime number is …………………. A) 0 B) 1 C) 2 D) 3

Unit (6) Assessment

[1] Choose the correct answer:

(1) 17 has .... factor(s).

ⓐ 1 ⓑ 2 ⓒ 3 ⓓ 4

(2) .... is a multiple of 9.

ⓐ 4 ⓑ 36 ⓒ 16 ⓓ 6

(3) The smallest odd prime number is ....

ⓐ 0 ⓑ 1 ⓒ 2 ⓓ 3

(4) The common multiple of all numbers is ....

ⓐ 0 ⓑ 1 ⓒ 2 ⓓ 3

(5) The common factor of all numbers is ....

ⓐ 0 ⓑ 1 ⓒ 2 ⓓ 3

(6) .... is a composite number.

ⓐ 5 ⓑ 2 ⓒ 3 ⓓ 4

(7) The GCF of the two numbers 18 and 24 is ....

ⓐ 2 ⓑ 1 ⓒ 6 ⓓ 72

[2] Complete:

(1) The smallest prime number is ....

(2) The prime number that just after 7 is ....

(3) .... is a multiple of 3, since 3 × .... = 12.

(4) The factors of 8 are: ...... , ... , ... , ...

(5) .... is a common multiple of the two numbers 2 and 8.

[3] Find:

(1) Find the GCF of the two numbers: 12 and 18.

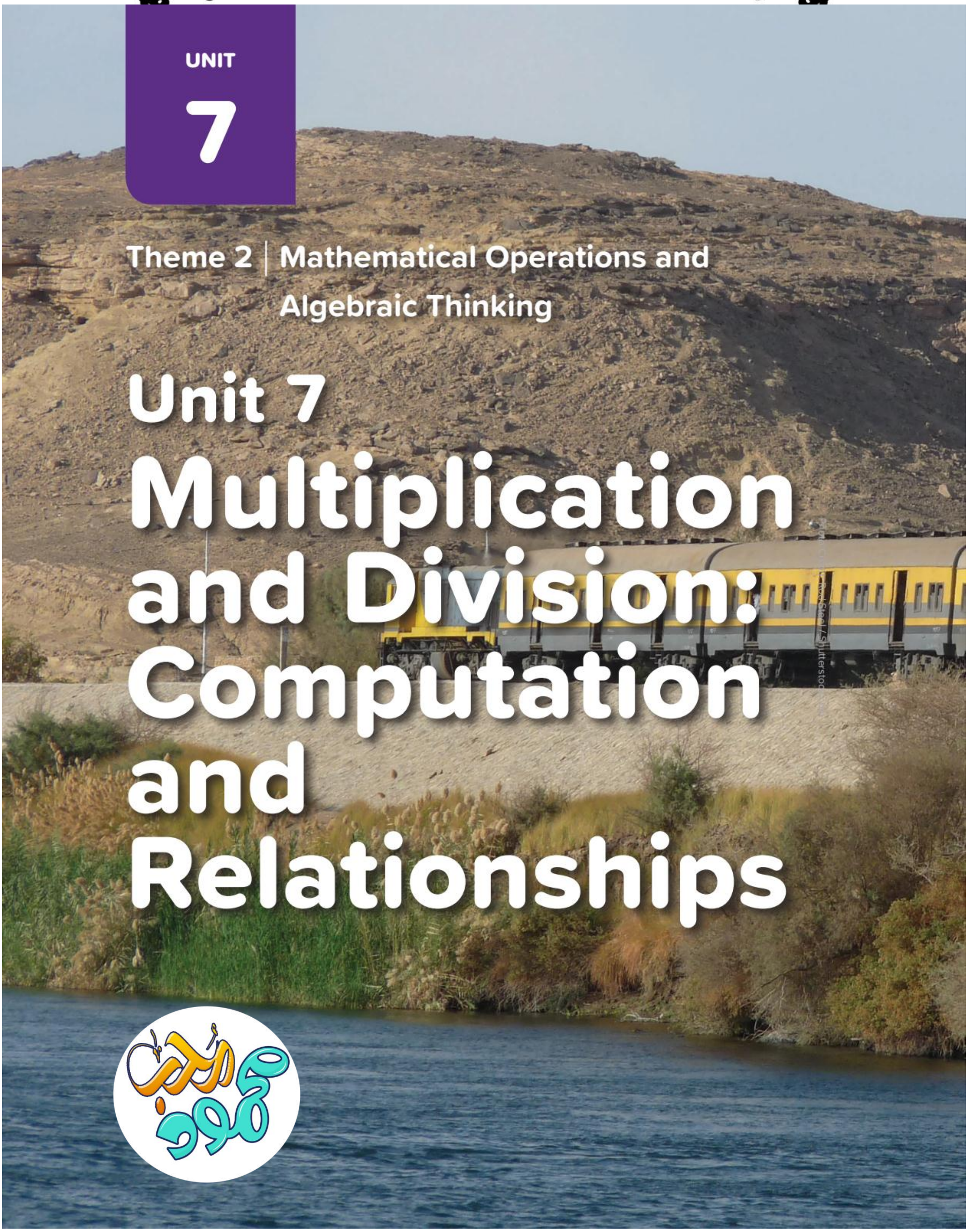
....

(2) Find 4 common multiples of the two numbers 2 and 4.

....





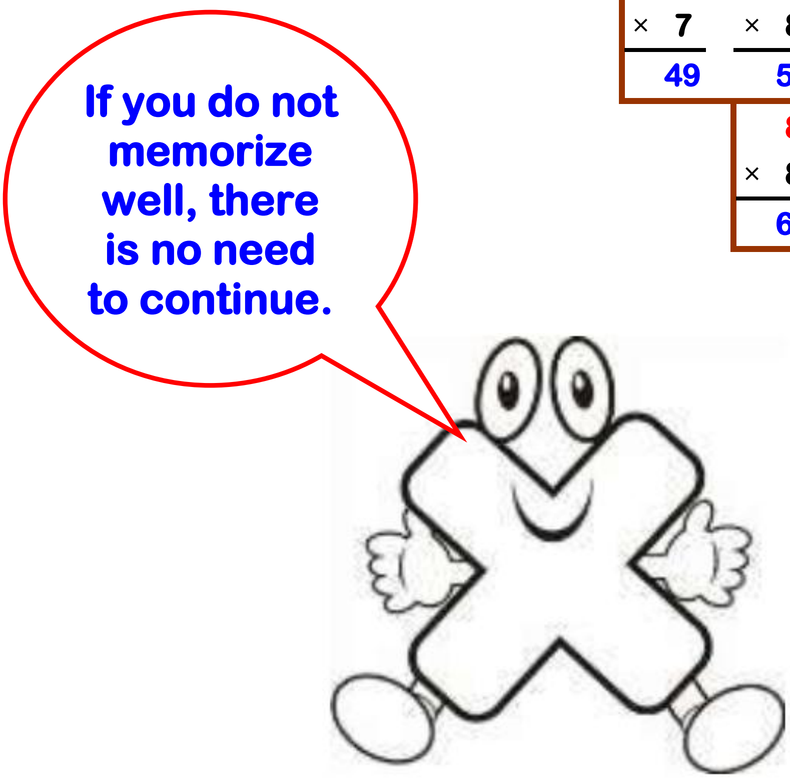


UNIT 7

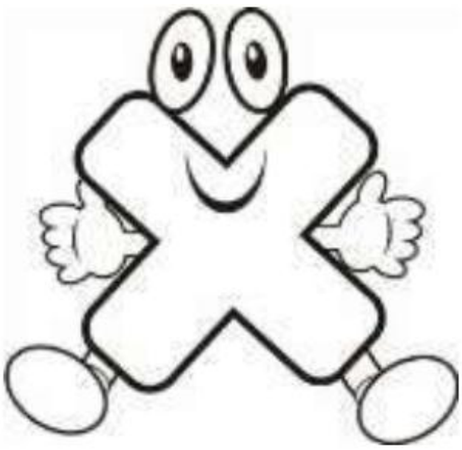
Theme 2 | Mathematical Operations and Algebraic Thinking

Unit 7 Multiplication and Division: Computation and Relationships

1	1	1	1	1	1	1	1	1	1	1	1
× 1	× 2	× 3	× 4	× 5	× 6	× 7	× 8	× 9	× 10	× 11	× 12
1	2	3	4	5	6	7	8	9	10	11	12
	2	2	2	2	2	2	2	2	2	2	2
	× 2	× 3	× 4	× 5	× 6	× 7	× 8	× 9	× 10	× 11	× 12
	4	6	8	10	12	14	16	18	20	22	24
		3	3	3	3	3	3	3	3	3	3
		× 3	× 4	× 5	× 6	× 7	× 8	× 9	× 10	× 11	× 12
		9	12	15	18	21	24	27	30	33	36
			4	4	4	4	4	4	4	4	4
			× 4	× 5	× 6	× 7	× 8	× 9	× 10	× 11	× 12
			16	20	24	28	32	36	40	44	48
				5	5	5	5	5	5	5	5
				× 5	× 6	× 7	× 8	× 9	× 10	× 11	× 12
				25	30	35	40	45	50	55	60
					6	6	6	6	6	6	6
					× 6	× 7	× 8	× 9	× 10	× 11	× 12
					36	42	48	54	60	66	72
						7	7	7	7	7	7
						× 7	× 8	× 9	× 10	× 11	× 12
						49	56	63	70	77	84
							8	8	8	8	8
							× 8	× 9	× 10	× 11	× 12
							64	72	80	88	96
								9	9	9	9
								× 9	× 10	× 11	× 12
								81	90	99	108
									10	10	10
									× 10	× 11	× 12
									100	110	120
										11	11
										× 11	× 12
										121	132
											12
											× 12
											144



1 × 1	1 × 2	1 × 3	1 × 4	1 × 5	1 × 6	1 × 7	1 × 8	1 × 9	1 × 10	1 × 11	1 × 12
	2 × 2	2 × 3	2 × 4	2 × 5	2 × 6	2 × 7	2 × 8	2 × 9	2 × 10	2 × 11	2 × 12
		3 × 3	3 × 4	3 × 5	3 × 6	3 × 7	3 × 8	3 × 9	3 × 10	3 × 11	3 × 12
			4 × 4	4 × 5	4 × 6	4 × 7	4 × 8	4 × 9	4 × 10	4 × 11	4 × 12
				5 × 5	5 × 6	5 × 7	5 × 8	5 × 9	5 × 10	5 × 11	5 × 12
					6 × 6	6 × 7	6 × 8	6 × 9	6 × 10	6 × 11	6 × 12
						7 × 7	7 × 8	7 × 9	7 × 10	7 × 11	7 × 12
							8 × 8	8 × 9	8 × 10	8 × 11	8 × 12
								9 × 9	9 × 10	9 × 11	9 × 12
									10 × 10	10 × 11	10 × 12
										11 × 11	11 × 12
											12 × 12



Concept (1)
Multiplying by 1-Digit and 2-Digit Factors

Lesson (1) The Area Model Strategy



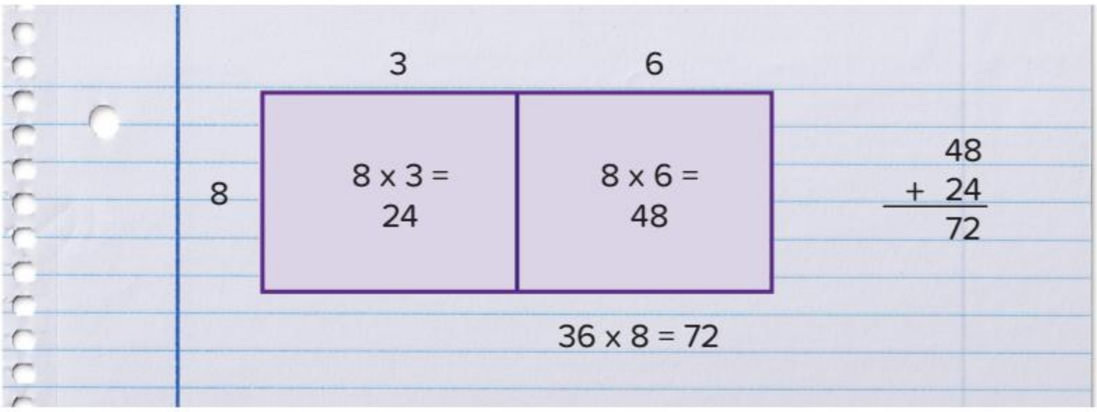
River Boat on the Nile

Twenty-two passengers can fit on each river bus at a time. What is the maximum number of passengers the river bus can carry if it makes 5 trips?

Decomposing Numbers Fill in the missing number for each decomposition.

1. 536 = 500 + ______ + 6
2. 1,275 = ______ + 200 + 70 + 5
3. 264 = 60 + 4 + ______
4. 7,625 = 5 + 7,000 + 20 + ______
5. 357 = 50 + ______ + 7

A student solved the problem 36 x 8 in the following way:



Is that true? Why?

Lesson (2) The Distributive Property

The Distributive Property and Area Models Use the area model to solve each problem.

1. 249 x 5

2. 4,734 x 5

3. 530 x 7

4. 2,391 x 8

Lesson (3) The Partial Products Algorithm

Example:

```
     731
  ×    4
  2,800 (700 × 4)
    120 (30 × 4)
  +   4 (1 × 4)
  2,924
```

```
    239
  ×   7
  1,400 ( 7 × 200 )
    210 ( 7 × 30 )
  +  63 ( 7 × 9 )
  1,673
```

Problem	Partial Products
7 x 59	
624 x 4	
6 x 3,293	

```
      6,421
x         6
-----------
     36,000   (______ x ______)
     ______   (6 x 400)
        120   (6 x ______)
+    ______   (6 x 1)
-----------
     ______
```

Solve using the partial products algorithm.

1. 4,731 x 4 =

2. 29 x 4 =

Lesson (4) The Standard Multiplication Algorithm

Similarities in Models Estimate the products of the two problems. Then, solve using the method assigned by your teacher.

1. 64 x 7

   Estimate:

   Solved Answer:

2. 132 x 8

   Estimate:

   Solved Answer:

3. 32 x 3

   Estimate:

   30 x 3 = 90

   Answer:

   32 x 3 = 96

4. 17 x 6

   Estimate:

   20 x 6 = 120

   Answer:

   17 x 6 = 102

5. 134 x 2

   Estimate:

   Answer:

6. 758 x 3

   Estimate:

   Answer:



Homework

Use numbers and symbols to solve each problem.

	Problem	Numbers and Symbols
1.	32 x 7	
2.	5 x 483	
3.	7 x 723	
4.	1,673 x 8	





```
      2,523
x         5
-----------
     10,000   (________ x ________)
  _________   (5 x 500)
        100   (5 x ________)
+ _________   (5 x 3)
-----------
  _________
```

3. 5 x 343 =

7. 1,349 x 2

Estimate:

Answer:

8. 2,327 x 4

Estimate:

Answer:

Concept (2): Dividing by 1-Digit Divisors

Lesson (5) Exploring Remainders

Learning Targets

- I can identify the **dividend**, **divisor**, and **quotient** of a division problem.
- I can solve division problems.
- I can explain what a **remainder** represents in a division problem.

Division Patterns Label the parts in the equation using the words divisor, dividend, and quotient. Then, look for patterns to complete the remaining problems. The first problem in the table is an example that is filled in for you.

600 ÷ 3 = Answer

600 is called the ______________________.

3 is called the ______________________.

The answer is called the ______________________.

There were 540 crayons in a large bin. Students were asked to put 9 crayons in a small box for each student to use. How many small boxes will students need in order to complete this task?

Put the suitable sign (<), (>) or (=):

350 ÷ 7	…………	450 ÷ 5
2,000 ÷ 5	…………	4,000 ÷ 5
400 ÷ 4	…………	1,000 ÷ 2
30,000 ÷ 6	…………	20,000 ÷ 4
24,000 ÷ 8	…………	20,000 ÷ 5
450 ÷ 5	…………	8,100 ÷ 9
2,400 ÷ 6	…………	1,500 ÷ 3
64,000 ÷ 8	…………	4,800 ÷ 6
300 ÷ 5	…………	400 ÷ 8
45,000 ÷ 9	…………	2,500 ÷ 5

Lesson (6) Patterns and Place Value in Division

Equation	Related Fact	Quotient
600 ÷ 3	6 ÷ 3 = 2	200
150 ÷ 5		
1,200 ÷ 6		
200 ÷ 4		
700 ÷ 7		
6,400 ÷ 8		
4,500 ÷ 9		
270 ÷ 3		

Lesson (7) The Area Model and Division

Use the area to model the following problem.

535 ÷ 5

Use the area model to solve each of the following:

a. 64 ÷ 2

b. 85 ÷ 4

c. 217 ÷ 5

d. 159 ÷ 3

e. 636 ÷ 6

f. 484 ÷ 8

Lesson (8) — The Partial Quotients Algorithm

Example 1

Divide.

a. $78 \div 6$ b. $658 \div 3$ c. $8,785 \div 7$

Solution

a.
```
6 | 7 8   10
  - 6 0
    1 8    3
  - 1 8
      0
```
$78 \div 6 = 10 + 3 = 13$

b.
```
3 | 6 5 8   200
  - 6 0 0
      5 8    10
  -   3 0
      2 8     9
  -   2 7
        1
```
$658 \div 3 = 200 + 10 + 9 = 219$

and the remainder = 1

c.
```
7 | 8, 7 8 5   1,000
  - 7, 0 0 0
    1, 7 8 5     200
  - 1, 4 0 0
         3 8 5    50
  -      3 5 0
           3 5     5
  -        3 5
             0
```
$8,785 \div 7$

$= 1,000 + 200 + 50 + 5 = 1,255$

Use the partial quotient algorithm to divide.

a. $52 \div 3$ b. $783 \div 5$ c. $7,320 \div 6$

Through the opposite division form the quotient equals ....

A. 37 (R7) B. 223 (R6)

C. 223 (R1) D. 137 (R1)

6	823	100
	− 600	
	223	30
	− 180	
	43	7
	− 42	
	1	

In the opposite division,
the quotient is: 224
and the remainder is: 4 ( )

4	8 9 7	200
	- 8 0 0	
	9 7	10
	- 4 0	
	5 7	10
	- 4 0	
	1 7	4
	- 1 6	
	1	

From the opposite division, the quotient = ...

ⓐ 137 R7

ⓑ 137 R1

ⓒ 223 R6

ⓓ 223 R1

6	8 2 3	1 0 0
	− 6 0 0	
	2 2 3	3 0
	− 1 8 0	
	4 3	7
	− 4 2	
	1	

The equation which represents the opposite figure is ....

ⓐ 85 ÷ 5 = 107 ⓑ 85 ÷ 17 = 5

ⓒ 85 ÷ 5 = 17 ⓓ 17 ÷ 5 = 85

5	85	
	− 50	10
	35	
	− 35	7
	00	

Lesson (9) The Standard Division Algorithm

454 ÷ 3 =

778 ÷ 2 =

368 ÷ 3 =

4,858 ÷ 4 =

240 ÷ 6 =

1,500 ÷ 5 =

414 ÷ 4 =

761 ÷ 6 =

Lesson (10) Division and Multiplication

Example 1

Write the division problem that matches the multiplication problem.

a.
```
   3 4
 ×   2
 -----
     8
 + 6 0
 -----
   6 8
```

b.
```
     518
 ×     3
 -------
      24
 +    30
 + 1,500
 -------
   1,554
```

c.
```
     908
 ×     7
 -------
      56
 +     0
 + 6,300
 -------
   6,356
```

Solution

a. 68 ÷ 2 = 34 b. 1,554 ÷ 3 = 518 c. 6,356 ÷ 7 = 908

Write the division problem that matches the multiplication problem.

```
    2 7
 ×    6
 ------
    4 2
 + 1 2 0
 ------
  1 6 2
```

☐ ÷ ☐ = ☐

Write the division problem that matches the multiplication problem.

a. 53 × 6 = 318
☐ ÷ ☐ = ☐

b. 623 × 3 = 1,869
☐ ÷ ☐ = ☐

c. 325 × 4 = 1,300
☐ ÷ ☐ = ☐

d. 505 × 5 = 2,525
☐ ÷ ☐ = ☐

e. 42 × 7 = ☐
☐ ÷ ☐ = ☐

f. 93 × 9 = ☐
☐ ÷ ☐ = ☐

g. 173 × 6 = ☐
☐ ÷ ☐ = ☐

h. 349 × 8 = ☐
☐ ÷ ☐ = ☐

Homework



2. 3200 ÷ 8 = __________

3. 67 ÷ 3 = __________

4. 455 ÷ 4 = __________

Use basic facts and place value to find the quotient.

6. 560 ÷ 8 = ______ **7.** 200 ÷ 5 = ______ **8.** 240 ÷ 4 = ______

9. 810 ÷ 9 = ______ **10.** 6,400 ÷ 8 = ______ **11.** 3,500 ÷ 7 = ______

12. 5,000 ÷ 5 = ______ **13.** 9,000 ÷ 3 = ______ **14.** 3,000 ÷ 5 = ______

Write the division problem that matches the multiplication problem.

a.

$$\begin{array}{r} 48 \\ \times\ 6 \\ \hline 48 \\ +\ 240 \\ \hline 288 \end{array}$$

☐ ÷ ☐ = ☐

b.

$$\begin{array}{r} 75 \\ \times\ 4 \\ \hline 20 \\ +\ 280 \\ \hline 300 \end{array}$$

☐ ÷ ☐ = ☐

c.

$$\begin{array}{r} 162 \\ \times\ 8 \\ \hline 16 \\ +\ 480 \\ +\ 800 \\ \hline 1,296 \end{array}$$

☐ ÷ ☐ = ☐

d.

$$\begin{array}{r} 615 \\ \times\ 9 \\ \hline 45 \\ +\ 90 \\ +\ 5,400 \\ \hline 5,535 \end{array}$$

☐ ÷ ☐ = ☐

$27 \div 5 =$

$156 \div 4 =$

$2,704 \div 3 =$

$583 \div 6 =$

198 ÷ 9 =

259 ÷ 7 =

564 ÷ 8 =

738 ÷ 6 =

Unit (7) Assessment

[1] Choose the correct answer:

(1) 4 × (2 × 6) = (4 × 2) × 6 represents .... property

a) commutative b) associative c) identity d) distribution

(2) 6 + 6 + 6 + 6 = ...

a) 6 × 4 b) 6 + 4 c) 6 ÷ 4 d) 6 – 4

(3) 24 ÷ 3 = ...

a) 8 b) 6R2 c) 7R1 d) 9

(4) If: 137 ÷ 8 = 17R1, then the divisor is ....

a) 137 b) 8 c) 17 d) 1

(5) Which of the following represents 6 × 35? ....

a) (6 × 50) + (6 × 3)
c) (6 × 30) + (6 × 5)
b) (6 × 50) + (6 × 30)
d) (6 × 5) + (6 × 3)

[2] Complete:

(1) If 36 ÷ 7 = 5 R1, then the dividend is ...., the quotient is ...., the divisor is ...., and the remainder is ....

(2) 1,600 ÷ 4 = ...

(3) 327 × 3 = ...

(4) 40 × 5 = ...

(5) Using the opposite area model, the quotient is ....

5	5×100 = 500	5 × 9 = 45
	100	9

[3] Find:

(1) A father wants to distribute 420 pounds among his five sons equally. What is the share of each son? ....

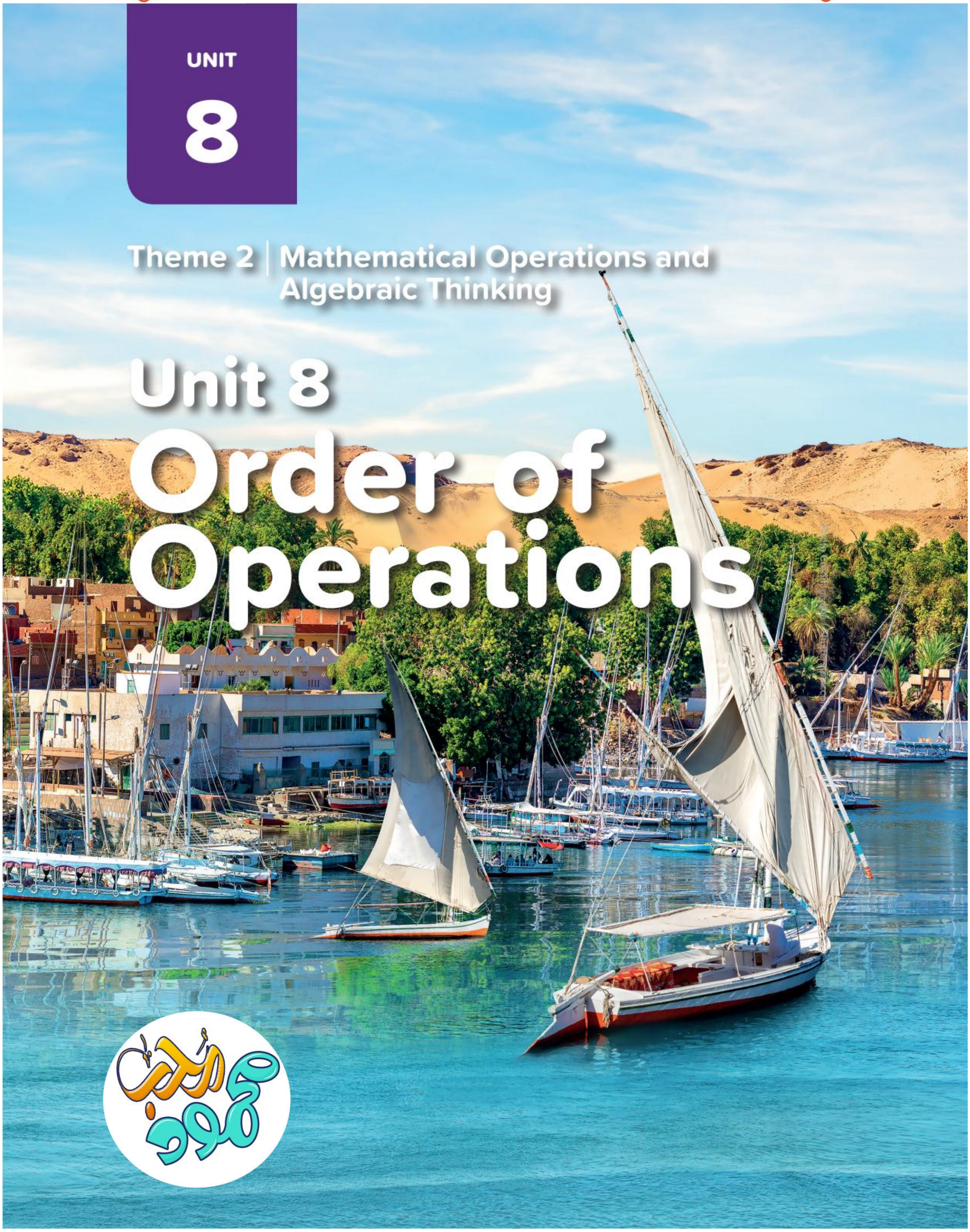
(2) Yahia distributed 21 bottles equally on 3 tables. How many bottles are there on each table? ....

(3) Using any strategy find: 5 × 249.

(4) Using the standard algorithm of division, find 1,022 ÷7.







UNIT

8

Theme 2 | Mathematical Operations and Algebraic Thinking

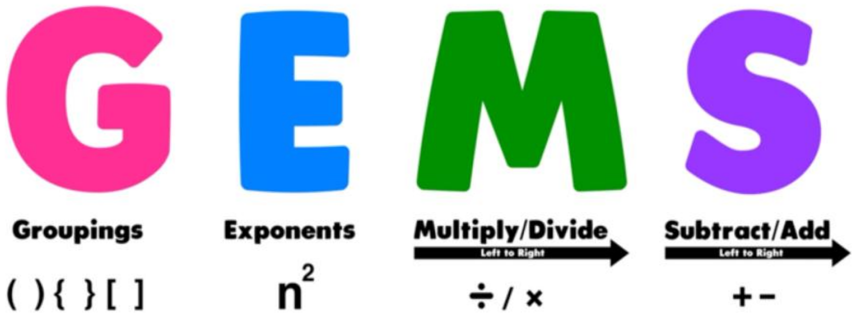
Unit 8
Order of Operations

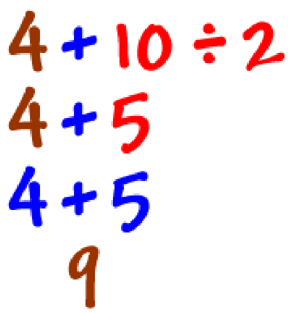
Lesson (1) Order of Operations

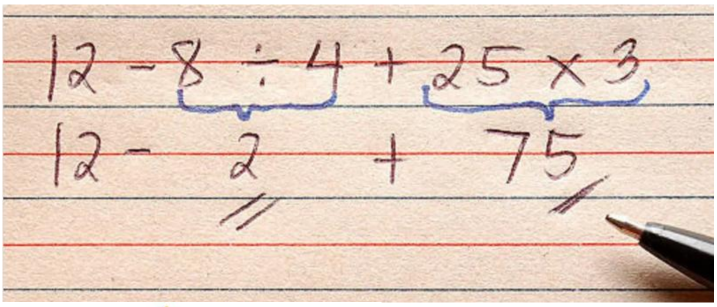
Parentheses

Multiplication and Division (left-to-right)

Addition and Subtraction (left-to-right)







3 + 6 ÷ 3 = 3 + 2 = 5	9 ÷ 3 + 6 = 3 + 6 = 9	7 × 2 + 4 = 14 + 4 = 18	5 + 3 × 4 = 5 + 12 = 17
9 – 6 ÷ 2 = 9 – 3 = 6	8 ÷ 4 – 2 = 2 – 2 = 0	5 × 3 – 7 = 15 – 7 = 8	9 – 4 × 2 = 9 – 8 = 1

Solve the problems. Show your work.

1. 18 x 2 + 8 – 3 = ____________

2. 73 – 60 + 15 ÷ 3 = ____________

3. 4 + 4 + 5 x 10 = ____________

4. 80 ÷ 8 – 7 = ____________





$8 \times 5 + 7 =$ ....

$=$ ....

$4 \times 8 - 5 =$ ....

$=$ ....

$7 + 2 \times 9 =$ ....

$=$ ....

$12 - 3 \times 3 =$ ....

$=$ ....

$7 + 8 \div 2 =$ ....

$=$ ....

$48 \div 8 + 5 =$ ....

$=$ ....

$36 \div 9 - 3 =$ ....

$=$ ....

$12 - 10 \div 2 =$ ....

$=$ ....

Lesson (2) The Order of Operations and Story Problems

Ashraf has to take the bus to work. It takes 27 minutes to get to the bus stop near his job. Then, he has to walk for 12 minutes from the bus stop to his place of work. How many minutes does Ashraf spend going to work during a 5-day week ?



A group of tourists are taking a tour of Alexandria. There are 172 tourists and 8 tour guides in the group. They want to travel to the pyramids in microbuses. Each microbus fits 9 people. How many microbuses will they need in order to get everyone to the pyramids ?

Bilal buys 6 packages of balloons. Each package contains 18 balloons. He wants to give the balloons to his friends at his birthday party. If he has 8 friends at the party, how many balloons can each friend take home ?.

Sita wants to bake berry muffins. Each muffin will have 6 berries in it. She buys 198 berries from the store. On the way home, she eats 17 of the berries. How many muffins can she make with the berries she has left ?

Homework

$9 \times 4 + 14 =$ ....

$=$ ....

$4 \times 8 - 9 =$ ....

$=$ ....

$6 + 3 \times 2 =$ ....

$=$ ....

$25 - 3 \times 7 =$ ....

$=$ ....

$6 + 18 \div 3 =$ ....

$=$ ....

$63 \div 7 + 21 =$ ....

$=$ ....

$42 \div 7 - 5 =$ ....

$=$ ....

$15 - 14 \div 7 =$ ....

$=$ ....

Unit (8) Assessment

[1] Choose the correct answer:

(1) $6 + 6 - 3 \times 2 =$ ....

ⓐ 12 ⓑ 5 ⓒ 6 ⓓ 7

(2) Which of the following = 6

ⓐ $24 + 6 - 2$ ⓑ $12 + 6 \div 3$ ⓒ $18 - 4 \times 3$ ⓓ $3 \times 1 + 1$

(3) $30 - 4 \times (2 + 1) =$ ....

ⓐ 102 ⓑ 28 ⓒ 18 ⓓ 78

[2] Complete:

(1) $99 - 9 \times 10 + 7 =$ ....

(2) $5 \times 2 + 4 =$ ....

(3) $300 \div (30 - 20) =$ ....

[3] Using the order of operations, find:

(1) $100 - (4 + 7) \times 9$

....

....

....

(2) $20 \div 4 - 3$

....

....

....

Exercises on Division

فى هذا الجزء يقوم الطالب بحل مسألة واحدة يوميا حتى نهاية العام حتى يتقن عملية القسمة المطولة

975 ÷ 3 =

541 ÷ 4 =

703 ÷ 3 =

115 ÷ 5 =

250 ÷ 2 =

373 ÷ 3 =

265 ÷ 5 =

254 ÷ 4 =

228 ÷ 5 =

216 ÷ 6 =

432 ÷ 8 =

441 ÷ 7 =

212 ÷ 5 =

212 ÷ 4 =

1536 ÷ 3 =

1926 ÷ 6 =

$1257 \div 5 =$

$1260 \div 4 =$

$1525 \div 5 =$

$2410 \div 6 =$

BEST WISHES